The Builder.

VOL. LXI. No. 2531. SATURDAY, AUGUST 8, 1891.

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The South Kensington Museum Designs.

THE competition for the architectural completion of the South Kensington Museum, so many years delayed, has resulted so far in the selection of the design of Mr. Aston Webb, which has been exhibited in the tea-room of the House of Commons during the last two or three days of this session of Parliament. The other designs are at present in a room at the Foreign Office, where we have had an opportunity of examining them. We presume it is intended that the whole should ultimately be exhibited to the public.

From the general similarity in the arrangement of the various departments it may be presumed that a tolerably definite programme was issued to the competing architects. All of them show European galleries or courts in the centre of the new portion towards the main road, a gallery or court for students' exhibitions to the eastward of this, an Oriental court or courts to the westward, and the entrance in the centre of the new main façade; and all are kept, on the façade towards Exhibition-road, somewhat clear of the block of the Science Schools, but most of them connected with it by a low building.

In Mr. Webb's plan the main entrance leads into an aisled hall running north and south, and leading through into the long Fabrics gallery running east and west. The large courts have corridors round them which are repeated on the first and second floors, the first floor galleries forming *loggie* opening into the upper part of the courts, while there are in most instances second floor galleries above the glazed roofs of the main courts. The style may be described as a rich variety of Romanesque, obviously intended for execution in terra-cotta, and admirably adapted for that material. Over the entrance rises a large square tower, very plainly treated in its lower portion, and with an octagon lantern in stages above the cornice. A lower building on each side connects it with the two wings, symmetrical in design, which rise higher, and are accentuated at the angles by square pavilions each crowned by a low segmental dome on an octagon base. At the angle near the Science Schools, in Exhibition-road, the new building is stopped by a small and characteristically-designed tower quite plain in treatment except for an enriched octagon lantern on the top. The central hall seems to be somewhat founded on the design of the central hall of the Natural History Museum, but with solid arches over the piers instead of the iron principals of the latter building; an improvement to the monumental character of the interior. The roof is a circular waggon-vault glazed in the central portion. The front of the hall nearest the entrance is treated as an octagon dome with a glazed roof, which plays no part in the exterior design, being nearly masked by the entrance tower from the front, and not likely to be much seen from any other point of view. The centre of the front sets back from the wings, and on the south side of the projection of the north wing an official entrance and corridor are provided, the front part of the ground floor in this wing being devoted to committee-rooms and offices. The public entrance from Exhibition-road is in a line with the axis of the Fabrics gallery. Mr. Webb alone among the competitors does not connect the Exhibition-road front with the Science Schools by any actual building, but provides a dignified carriage entrance in the middle of a boundary wall falling back from the road in a semicircle. This is a good point; in some of the other plans the carriage-entrance here appears too confined or too much crushed up towards either the new building or the Science Schools. The staircases are not treated internally with any special attempt at effect. Two of them ascend from the side aisles of the central hall on each side; a third forms a projection in the Exhibition-road front.

Generally speaking, the effect of the whole building will be rich and picturesque, and appears to have been designed to harmonise to some extent with the Natural History Museum, which is its near neighbour.

The other designs, seven in number, we may take in the order in which they have been hung at the Foreign Office. The principal distinguishing feature of the plan is the manner in which the central hall behind the entrance has been treated, and the architectural arrangement of the principal façade. In the first we come to, marked by an "Arrow on a Shield," the line of the front is kept rather flat as to line of plan, and the central hall is a great circular apartment crowned by a solid dome, panelled or coffered all over, with a small eye in the centre and a range of square-headed lights at the springing. The hall is treated architecturally with two orders of coupled columns at the piers, a large arch between rising through both stories of the order; above the orders is a gallery with an open loggia. The effect of the immense mass of coffered roof, apparently rather exaggerated in the perspective interior, is too heavy and crushes the substructure in appearance. Externally it is difficult to define the style (we do not cite that as a defect); a square campanile mounts guard on each side of the central or entrance block, the dome showing above and between these campaniles; at the angle next the Science Schools is an octagonal campanile with an open loggia at the top and a peaked roof over it, rather pagoda-like in effect. The ground story in the wings has large, low, circular-headed windows, the middle story Renaissance-like windows with cornices; a continuous band of small circular-headed windows runs along under the cornice, and binds the whole together, which is rather necessary, for though there is a great deal of refined detail, the design as a whole is rather wanting in breadth and continuity.

"Verona" has little about it to suggest that motto; it is a great deal too neat and handsome for the associations connected with the word; but the entrance portion is treated with great dignity; it is set back and connected with the wings by a quadrant on each side, and the space before this portion laid out as an ornamental garden. The basement is treated solidly, with round-arch windows in the centre portion and quasi-Renaissance windows in the wings, apparently treated to harmonise with the details of the Science School. On the upper story is a Corinthian order with sculptured decorations on the lower portion of the columns. There are cupolas at each angle of the centre block, and at the south-west angle a large staircase tower finishing in a lantern of several stages. The new building is connected with the Science Schools by an open arcade with a

story over. The centre court is a great square apartment. The general feeling of the design is more Classic than the two last named; it displays nothing very original in detail, but has the undoubted merit of dignity in the principal façade. No interior perspective appears to have been submitted.

"Ars longa, tempus breve" is a dosign of much originality and effectiveness externally, Romanesque in basis, with a slightly Oriental feeling about it, rather to be felt than defined. The centre of the façade is set far back, with a great recessed arch over the doorway, and a tower over, crowned with a dome of rather high elliptic section. The angles are accentuated by large solid-looking circular turrets, and the principal staircase, projecting near the south-west angle (on the Exhibition-road side) is treated with exterior raking lines in a very effective manner. The central hall is a square compartment, with the roof lines treated diamondwise on plan, girders being run across the angles continuing the line of the main cornice of hall, leaving flat triangular compartments at the angles with small glass domes, the centre being lighted with a glass dome and semi-domes. The treatment is clever but a little eccentric. The main story is decorated externally with coupled columns with the three lower drums ornamented with foliage above and below and figure bas-reliefs between. The decorative details of this and other portions are very well shown on the detail elevation and exhibit both rich and refined design. The general effect of the whole exterior is powerful and original.

"Τέχνη τύχην ἔστιρξε και τύχη τέχνην." The plan of the main front is set back in the centre as in the last-named design; the entrance-hall an oblong, parallel to the front, with a corridor running back in the rear and a large square court on each side of it. The general treatment of the exterior is of a rather too pretty and furniture-like type of Renaissance design, not however unsuited to terra-cotta treatment, and in some points recalling such work as that of the Certosa at Pavia. The detail as shown on the larger scale elevation is very elegant, but in the general perspective view the building seems very much wanting in force of effect, and has no leading feature, no effective grouping. The south-west angle is rather oddly treated as a concave quadrant, on the centre of which is planted a fountain on a basement the steps of which complete the circle of the quadrant; a pretty and novel idea, but a concave treatment at the angle appears weak. The best portion of the design is the entrance-hall, shown in a very well and cleanly executed perspective drawing; the architectural treatment here is at once solid and monumental, and graceful, and is in marked contrast to the flat and rather weak treatment of the exterior.

"Chi se Contenta Gode" is a curious design with some good and some very defective features. The centre is set back and connected by quadrants with the wings, a centre tower with an octagonal dome over the entrance, and pavilions with high roofs at the angles of the wings where the quadrants connect to them. A mistake in the plan is that the oblique angle of Exhibition-road has been followed in the lines of the courts near it, which are consequently irregular in shape, a great mistake in a building of this monumental character. There is a certain degree of French Renaissance character in parts of the exterior design, but not in the whole aspect, which is rather nondescript and deficient in marked character, and some of the detail is odd and eccentric in character, such for instance as the curious filling-in of the window-heads in the upper part of the tower. A large scale bas-relief sculpture frieze runs along in a broad band from the flanking towers of the wings across the centre of the building, and forms a good feature, and the detail elevation shows a good deal of effective decorative work very suitable for execution in terra-cotta. The most effective exterior feature is the large circular angle-turret breaking into an octagon above and crowned by a two-storied lantern. But though the general perspective (a washed Indian-ink drawing) is pleasing in effect, the whole design is very scattered and deficient in leading motive. The view of the central court behind the entrance is a curious affair. At the end opposite the spectator is a Renaissance gallery or tribune, but the main arcade of the hall is Early French Gothic in character, and quite out of keeping with the end portion of the apartment. It is roofed by ponderous semi-circular iron principals, decorated on the solid portions, and the space between the backs of the principals and the glass roof (which is at a different slope) is filled up with ornamental open wrought-iron scroll-work. The effect is certainly not refined or architectonic.

"English Tradition" is an exceedingly curious design for the situation, and one which it would be quite impossible to accept either in itself or as the completion of the South Kensington Museum. The "tradition" seems to be that of the architecture of Newgate, the building being a low square-lined mass covered with rusticated joints, with a pediment here and there and an order of Ionic columns accentuating the central block over the entrance. The author of this design has also introduced a concave quadrant in the plan of the south-west angle, marked with a small pediment and columns at each return. The windows are stern openings without ornament and with heavy rusticated voussoirs over them. The perspective view, with its collocation of heavy square masses, has a powerful effect in its way, but it is the architecture of a gaol, not of an art-museum, and the whim of picking out this particular form of architecture as above all others the representative of English tradition is singular enough. The central hall is called the "Index hall," the idea being apparently that it is to be the central place of reference in regard to the whole contents of the museum; an idea in itself worth note. The hall is square in general plan with a dome over, and an immense niche in each angle. Whatever the merit of the design (and it is certainly not without merit), we must accept the fact that the Kensington Museum is a building partly executed, and that the existing portion is utterly at variance with such a treatment as this. The Science School, which is the prominent external portion, is a piece of picturesque and refined architecture, and most of the other designs would harmonise fairly with it; two or three of them have evidently (and rightly) been designed with this object.

"Prince Albert" is a design very eccentric in some respects, but with powerful features. The front is treated with wings coming up to the road and a deeply-recessed centre connected with them by quadrants. The central hall is a rather narrow compartment running north and south, and crossed by a very wide corridor or gallery running east and west, interrupted by two eight-sided compartments or vestibules masked externally by cupolas. This is a good interior feature. Externally the front portion on the wings is kept low, and an applied order of very lanky columns runs right along the whole front from east to west, following the curve of the quadrants. This is a broad and dignified treatment of the ground story in idea, but unfortunately the details are very poor, and the effect of the façade is very much broken up and weakened by placing the loftier part of the building at the back and masking it by this low building in front. A large internal perspective of the main staircase, washed in Indian ink in a somewhat tremendous style, is effective in its way, but the scale and distance of the interior effect seem very much exaggerated. The best point in the design is the detail elevation, which shows a series of terra-cotta bas-reliefs of female figures supporting escutcheons with the names of great artists; this portion of the design is well conceived and well drawn.

A consideration of the collected designs will on the whole ratify the selection which has been made. We do not much like the architecture of the central hall; in regard to the interior views one or two others of the designs are certainly superior to this. But the exterior has on the whole more unity of design and expression than any other of the set, and is in keeping architecturally with its position and surroundings. We should be disposed to say, however, that Fowke's sketch for the façade possessed, as a whole, more breadth and dignity of conception than any of those which have now been submitted; though its details, had it been carried out under his direction, would probably have been much inferior to the best of these. On the whole, however, the result of the competition is satisfactory, and it is to be hoped that no time will now be lost in carrying out the building to its completion. Its existing state has long been a national discredit.

STREET ILLUMINATION IN THE CITY.

IT is perhaps not generally known that the one square mile over which the City of London extends, contains fifty-six miles of streets. The Commissioners of Sewers have authority over this district for sanitary, lighting, and other purposes; and at the present moment are engaged in laying down electric plant in every part of the district over which they have authority.

This is not to be a mere illumination of the principal thoroughfares, but a complete lighting of every street and alley, so that there shall not be a corner over which the electric light shall not shed its beneficent rays. For electric-lighting purposes the city is divided into three districts. In the East district the Laing-Wharton and Downs Syndicate are at work, in the Western and Central districts the Brush Company has already so far advanced as to show some results of its labours.

We may hope soon, therefore, to see arc lights and incandescent lights competing with each other for public approval, and if all turns out as successfully as it is hoped, the City of London may soon dispense altogether with gas for the purposes of street illumination.

The history of lighting the City is a subject of much interest. In remote times the City must have presented a very curious aspect; there was no method of street lighting at all; the narrow unpaved streets were deserted when darkness fell except by thieves, who found in the want of artificial illumination a splendid *confrère* to help them in their nocturnal undertakings. Notwithstanding the ringing of the curfew bell, and the order that all lights and fires were to be extinguished when its sound was heard, it was soon found that a City could not conclude all its business at eight o'clock in the summer, or when darkness came over the City in winter.

Kindly-disposed citizens as early as the fourteenth century began to hang outside their doors a common candle made of rushes and coarse grease, and these gave a faint glimmer on moonless nights. We find that in the year 1416, in the reign of Henry V., the citizens were called upon as a duty to light the streets, but although some obeyed the injunction, the duty was very inadequately performed. It was the custom then for the ancient watchmen to carry lanterns containing burning candles placed on the top of a long pole, thus lighting in some small way the streets over which they perambulated.

It was in the reign of Queen Elizabeth that the fear of a Spanish invasion drew attention to the dangerous condition of the streets at night. The darkness might hide foul conspirators, consequently an Order in Council commanded every householder to do his part in the lighting of the City on pain of death by the common hangman. This order seems to have excited some attention, for at the present day there are to be seen in the Museum underneath the Guildhall Library several of the candlesticks said to have been used at this period for street illumination. The candle-

stick consists of a rude bar of iron, having at its back a rack, and a catch by which the socket holding the candle can be raised or lowered.

The first real advance in the lighting of the streets took place when the Corporation of London granted a licence in the year 1684 to Edward Heming to illuminate the streets with the oil-lamps he had invented. Heming undertook to place a lamp before every tenth door between the hours of six and twelve, but only on moonless nights from Michaelmas to Lady-day.

The era of oil lighting did not, however, prove very successful; the City was very imperfectly lighted; indeed, in some parts darkness reigned entirely. That there was a great need for some improved system of lighting may be gathered from the fact that in some parts it was positively dangerous to be unprotected in the streets. It was customary for pedestrians to wait till a little band was collected, and thus strengthened, they ventured forth, so that by their unity they might overcome any attack from the common foe.

Horace Walpole, writing from Strawberry-hill, pictures the dreadful state of affairs when he says that so unsafe had it become to be out after dark, that he could not stir a mile from his own house without having one or two servants armed with blunderbusses to protect him.

It was in the year 1736 that the Corporation of London obtained Parliamentary powers to erect lights where they thought fit, and to levy a rate for that purpose. In that year the rate produced 15,000*l.*

While the oil-lamps were flickering in the City, many experiments were being made by another illuminant, which was destined soon to supersede it.

With all the knowledge that the ancients possessed they knew nothing of gases. Paracelsus, who was born in 1493, is generally regarded as the first to obtain gas by the action of dilute acid on limestone; but he did not see the advantage of his discovery. Gases were at this time spoken of as "spirit," the term "gas" being derived from the German word "geist," a spirit. In remote times the fountains of inflammable gas issuing from the earth were looked upon with dread, and worshipped as emblems of the Deity.

Shirley, in the "Philosophical Transactions," published in 1667, gives "a description of a well and earth in Lancashire taking fire by a candle approached to it." This was a spring near Warrington, where "the water did burn like oyle." The attention of the Rev. Dr. John Clayton was directed to this spot, and he tells us "when, after having caused a hole to be dug, on the candle being put down into the hole, the air catched fire and continued burning." Dr. Clayton then distilled some coal in a retort on an open fire, filled a number of bladders with the "spirit," and amused his friends by pricking holes in the bladders and burning the gas.

Although these experiments took place in 1690, it was not till more than a hundred years had passed away that any attempt was made to put the discovery to any practical use.

It was in 1792 that Mr. Murdoch, an engineer, at Redruth, in Cornwall, conceived the idea of employing gas to replace candles and lamps. Previous to this, in 1781, Lavoisier had invented the gas-holder, and it may have been the knowledge of this that encouraged Murdoch to utilise gas for practical purposes; and that coal-gas could be used for illuminating purposes, he demonstrated by lighting his own house and offices at Redruth with gas, and in 1798 he did the same at the Soho Engine Works, near Birmingham. It is generally admitted that the first gasworks were erected by Murdoch in 1802 or 1803 for the purpose of supplying gas to the premises of Messrs. Boulton & Watts.

Winsor, a German, now appears on the scene; in 1804 he lectured at the Lyceum Theatre on gas lighting, exhibiting many experiments to substantiate his ideas. Winsor had considerable perseverance; after much trouble, he succeeded in obtaining from subscribers the sum of 20,000*l.*; he hired spacious premises in Pall-mall, on the site of the present Carlton Club. Here he endeavoured to educate the public in the advantages of using gas; by means of free lectures he demonstrated that gas could be used for lighting, heating, and cooking, with perfect safety to life and health.

Gas was made on the premises, pipes were laid down, and lamp-posts erected in Pall Mall, and on January 28, 1807, one side of that thoroughfare was lighted by gas, and on June 4 of the same year both sides of the streets were ablaze with gas, and they so continued lit during the sessions of Parliament 1809 and 1810. In the latter year Parliament granted an Act of incorporation to the Gas Light and Coke Company, having a capital of 200,000*l.*, the Royal Charter being granted in 1812. The next year Westminster Bridge was illuminated with gas, and in 1814 the neighbouring parish of St. Margaret had the honour of being the first parish lit by gas. When the Allied Sovereigns visited this country in 1814, a magnificent pagoda erected in St. James's Park was lit with gas, and in the year following the Guildhall was lit in the same way. Many were the extravagant praises of gas in the newspapers. One spoke of gas "shedding a brightness clear as summer's noon, but undazzling and soft as moonlight, altogether forming a magnificent combination worthy of the inauguration of the presiding citizen of the great City."

The success of gas lighting soon caused many rival companies to be established; the laying down of mains caused the streets to be in a continual state of disorder, as many as twelve mains being laid in one thoroughfare.

The reign of gas lighting continued while it had no competitor; this, however, arose in the shape of the electric light. Extravagant rumours alarmed shareholders in gas companies, and schemes of all kinds soon occupied the busy brains of scientific men.

The Gas Light & Coke Company, to show how gas could be used as a street illuminator erected, throughout the city, at their own cost no less than 112 lamps, most of them having an illuminating power of seventy-five candles, and burning 17 cubic feet of gas per hour, while the ordinary gas-burner only consumes 5 cubic feet per hour.

The first experiments in street lighting by electricity were made on the Continent. Extravagant undertakings were carried out in the Avenue de l'Opéra, Paris, in 1878-81. It was not to be wondered that many were the demands made on the City Authorities for a trial of electric lighting in the City. The Commissioners of Sewers, desiring not to be in the background, illuminated parts of the City with various systems of electric lighting, but this kind of street illumination was only in its infancy. There could be no positive reliance placed on the electric light supply. It sometimes failed so, that important thoroughfares, like Cheapside, were at times left in darkness.

Since that time many experiments have been made, and it is believed that the time has now come when a genuine and complete attempt may be made to light up every part of the City by the electric current.

New Mansions in Flats at Kensington.—One of the largest undertakings at the present time is probably the large blocks of flats now in course of construction on the site of the old Fisheries Exhibition, between the Albert Hall and Imperial Institute. Some idea of the magnitude of the work can be obtained when it is mentioned that there are sixteen acres of fireproof flooring in the mansions, the whole of which is being constructed on Fawcett's system. Mr. F. Hemmings is the architect.

London and Westminster Bank, Token-house-yard.—Extensive alterations are being made at 4 and 5, Tokenhouse-yard, for the London and Westminster Bank. The fireproof floors are being constructed on Fawcett's system. Mr. F. W. Hunt is the architect.

NOTES.

MR. FLINDERS PETRIE'S reputation as an Egyptologist is European, but in the paper that he has contributed to the last number of the *Hellenic Journal*, just issued (Vol. XII., No. 1), he does signal service to Greek archæology. The paper appears under the unpretending title of "Notes on the Antiquities of Mycenæ," but it is nothing less than an attempt, and we think a successful one, to give a definite date to these antiquities. When Dr. Schliemann excavated Mycenæ there were no sufficient data for judging the age of the civilization thus suddenly revealed. The new facts presented were isolated, and full rein was given to all manner of conjecture. Since then the discovery of many other pre-Hellenic tombs in Greece, and the unexpected links found in Egypt, afford, Mr. Petrie thinks, a basis for an approximate chronology. His arguments are mainly based on a careful comparison of the technique of the objects found in the various pre-Hellenic tombs in Greece with the technique of similar objects found in Egypt, and there securely dateable. Such arguments must, of course, be studied in detail, and to be satisfactorily appreciated must be studied with the actual objects at hand; we can only here summarise the main results at which Mr. Petrie arrives. He places the flourishing period of pre-Hellenic art at about 1500 or 1400 B.C., when intercourse with Egypt was common. The great treasury tombs probably range from this time to 1200 B.C., when the great Vaphio tomb was built. At about 1150 B.C. the graves were made in the circle at Mykenæ, and decadence had already set in. Here, no doubt, most archæologists will be at one with Mr. Petrie, as the rigorous archaism of the Vaphio cups cannot represent a decadence. From 1100 to 800 B.C., or until the art was crushed by the Dorian migration, the prevailing decorations were in impressed glass, and to this period belong the beehive tomb of Menidi, and the private tombs of Mycenæ, Spata, and Nauplia. A curious and satisfactory point about this chronology is that it accords with legendary Greek chronology, which represents the great period of Mycenæ as extending from 1300—1100 B.C., and indicates connexion with Egypt at about the dates 1500 or 1600 B.C. Turning to literary records on the Egyptian side, the agreement is no less marked. The Libyans made alliances with the Achæans, Dardanians, and Turseni, and other Ægean races, who were granted a great confederacy extending over the northern shores of the Mediterranean. This confederacy successfully made its way into Egypt about 1200 B.C., and was then ejected, and again in 1100 B.C. This period of enterprise agrees with the most prolific time of Mycenæan art. Long before, however,—*i.e.*, as early as 2500 B.C., as is proved by the analogy of their pottery,—the Ægean races were familiar with Egypt.

THE proposed arrangements at the Hygienic Congress as to times of sectional meetings seem to have varied a good deal in the process of consideration in committee. The last official information that we have, however, just as we are going to press, is that the meetings of the Section of "Hygiene in relation to Architecture" will be held in the Examination Hall of the University of London on the mornings of the 11th, 12th, 13th, and 14th, from 10 a.m. to 2 p.m. We presume therefore that it is intended to go through each day's meeting at one sitting, instead of having a break in the middle of the day and resuming business afterwards. This is perhaps the best policy, as it is always found difficult in cases of this kind to re-assemble an audience after a break in the proceedings; but the managers of this section at all events will find enough to do to get through their programme in the allotted time. It is to be hoped that the architectural profession will evince their practical interest in the subject by mustering a good

attendance at the meetings of this section, and contributing to the discussion of the subjects dealt with.

DR. R. BRUCE LOW'S report to the Local Government Board on the prevalence, in certain localities of Northamptonshire, of anomalous illnesses, characterised by pneumonia, &c., which is before us, was undertaken in the first instance in consequence of an outbreak of disease, chiefly among children, at Raunds (a place known to architects for its fine tower and spire): but further inquiry led to the conclusion that the illnesses referred to did not originate at Raunds, but existed in other parts of the county, though there was no doubt that the insanitary condition of Raunds favoured the development of disease. The following is Dr. Low's statement as to the general sanitary condition of the village:

"It has an estimated population of 3,350 persons, most of whom reside in Raunds village, and are employed (many of them at their own homes) in the shoemaking industry. The village, situated in a shallow valley of Great Oolite, consists chiefly of a single long straggling street with several short streets. Parts of the village are somewhat closely built, so that dwellings have little open space about them; but most cottages have gardens, or at least a backyard, though the latter has been sometimes reduced in dimensions by the erection in it of a small workshop. Nearly parallel to the main street is a small and shallow brook which joins the river Nene about two miles below the village. Into this brook is discharged most of the liquid refuse of the place by way of channels and drains of various sorts. There are no sewers properly so-called. Excrement disposal is mainly by old-fashioned privies, partly by pail-closets, which have been recently introduced. The few water-closets of the place discharge directly into the brook, or indirectly by way of cesspools, which have overflow thereto. Water-supply is from private pumps or draw-wells, situated near to dwellings. In addition, there are four public pump wells in the main street, under the care of the Sanitary Authority."

Raunds is situated, we may observe, in the Thrapston Rural Sanitary district. We fear it has long been a very neglected place in many ways. We have not heard lately as to the condition of the fine church; but when we visited it a good while ago, the nave was literally going to pieces for want of proper care, the aisle roofs partially propped up and in a dangerous condition. Neglect of this kind very often goes along with sanitary neglect.

IN reference to the plan of the Polytechnic Institute for south-west London, a medical correspondent, Mr. C. Roberts, writes:—"It is a great error placing the gymnasium in the centre of a building of this kind, as it cannot be properly ventilated. Plenty of fresh air is absolutely necessary where gymnastics are carried on, or else the exercises will do more harm than good. Gymnasiums should be always placed on the side of such a building as this. The same objection applies to the central position for the swimming-bath, though not to the same extent." Of course effective ventilation in the ordinary sense of the word, viz. adequate renewal of air, can be perfectly well effected in an apartment in the centre of a building by proper means. We take it that what Mr. Roberts means is that direct contact with the external air is advisable during gymnastic exercise. This is undoubtedly true. Outdoor sports are much healthier than indoor exercise, by common consent; and in this sense Mr. Roberts's criticism deserves the attention of architects.

THE case of Cowper-Essex *v.* the Acton Local Board, tried this week, decided a useful point of law in regard to land compensation. Part of the total sum paid by the defendants in respect of certain land which they took for the purposes of a sewage-farm, was in respect of the consequential damage done to adjoining land which belonged to the plaintiff. The part of the money which was paid in respect of the land taken, carried interest, but it was contended on their behalf that no interest was payable on the other part of the money. This contention was upheld by the Judge. Obviously there is a great difference between the money which is paid, so to say, to represent land taken, and that which is paid as damages because property is injuriously affected. Damages at common law do not carry interest, and therefore, by analogy, damages under the Land Clauses Act should also not carry interest. But, right or wrong, Mr. Justice Denman has decided this point, and unless his decision is reversed by the Court of Appeal, the judgment which he has just delivered is the law.

WE have received a polemical pamphlet from Mr. Helby, a well-known irrepressible member of the London School Board, with the title "How the money goes and who spends it: an appeal to the Ratepayers of London." We have little sympathy in a general way with this kind of pamphleteering, which is carried out more to catch votes than for any public end; but the section given of the state of things found under the boarded floor of the lavatory at Stockwell-road School, if correct, shows very serious lapse of duty on the part of some one. Complaints, it is said, were made of illness among the staff and bad smells, and an examination was made, when it was found that the drain under the lavatory floor was being ventilated into the space under the floor, and that a defective urinal pipe was discharging on to the ground. An iron soil-pipe near had open joints which admitted sewer air into the staircase and passages. Mr. Helby has been at the trouble of having an illustration of this arrangement made, to enforce his remarks; and if it is an accurate record, it shows that very bad things may be done in London Board Schools for want of adequate supervision.

THE new buildings of the Bankruptcy-court, which stand back to back with King's College Hospital, and occupy part of the ground left vacant at the western end of the Courts of Justice, are now revealed by the striking of their scaffolding. They present what will be called in the daily newspapers at the time of their formal opening "a handsome and imposing elevation in the Italian Renaissance style," about which little need be said beyond that it is neatly carried out in Bath stone, and will probably satisfy official critics, having a due proportion of shelves (mis-called "cornices") at various levels, a plentiful sprinkling of small pediments, and a massive balustrade at the top. But above all these conventional decorations, so essential to a modern English public building, rises a piece of mysterious symbolism too striking to be passed by without an appreciative notice, especially in these days when symbolism is said to have been for long a language dead without hope of revival. The centre of the main façade is adorned with an erection of the kind so dear to the present generation of architects, which, being neither a gable nor a pediment, nor anything having any structural character whatever, is commonly described as a "feature." The feature in question consists in great part of a huge panel filled with a carved representation of the Royal Arms, but above this, and worthily crowning the whole edifice, is an elaborately-executed stone soup-tureen of magnificent proportions! What is the symbolical meaning of this object in this position we are unable to suggest.

ADVERTING to our "Note" of July 25 last about the courtyards along the western side of Lincoln's Inn-fields, we find that an early view of those houses, originally called Arch- or West-row, is stamped upon a silver medal in the national collection. The medal, which is about 2·05 in. in diameter, by Bower, was struck to commemorate the destruction of Roman Catholic chapels in London, upon the accession of William and Mary. Their busts, draped and joined, appear on the obverse, with royal titles, and "G. B. Fecit." The reverse shows the chapel of SS. Anselm and Cecilia, in Duke-since Sardinia-street, as in ruins, with the burning of Papal emblems in the Fields, and motto, "Nec Lux iustior illa." The chapel, attached to the Sardinian Embassy, was pillaged on December 10, 1688, and, again attacked by the "No Popery" rioters (1780), has been rebuilt. Certain houses in the row, together with No. 2, Portsmouth-street, Lincolns Inn-fields Chambers,* are, we believe, all that survive of Inigo Jones's work in laying out the Cup, or Cop, and Purse Fields under a commission issued *ad hoc* to the Earls of Worcester, Arundel, and Pembroke, with Lord Verulam, Jones, and others, in 1618, four or five years after the Lords in Council had written to the county justices to stop certain intended encroachments upon the ground. Inigo Jones began, on Purse-field, with the block of houses we referred to, using red brick (see the original front of No. 2), and setting up on the pilasters the cognisances of the Rose and Lily Queen, Henrietta Maria. We do not find that he proceeded with Portugal-row or Holborn- otherwise Newman's-row, south and north respectively. With the exception of No. 2, his work is stuccoed, or painted, over, including Lindsey, or Ancaster, House, Nos. 59-60; the next house, Nos. 57-58, apparently of later date, has a stone front. In his Life of Inigo Jones, published by the (old) Shakespeare Society, Peter Cunningham says that at Wilton, Lord Pembroke's seat, was a carefully drawn elevation, in oil colour, of Jones's design, showing Lindsey House as a principal feature thereof. In Campbell's "Vitruvius Britannicus," 1717, the house is stated to have been built in 1640, with a 62 ft. frontage. Hatton (1708) mentions the spacious brick piers,—they are finely laid,—and their vases; the six urns no longer rest above the balustrade, and what he calls "the curious iron-work between the piers" seems more modern, but has two old lamp-holders. This house, the home of Spencer Perceval, was converted into chambers in 1849. John Forster lived at No. 58, where his rooms have been identified with those of Tulkinghorne, in "Bleak House." Powis, since Newcastle, House, at the northern corner, was built,—from the designs of Captain Winde, Webb's pupil,—in 1686, for William Herbert, Marquess of Powis. Forfeited to the Crown through his adherence to the Stewarts, the house became attached to the Lord Chancellorship, and was next sold, in 1711, to the Duke of Newcastle. Timbs says that Inigo Jones built Portsmouth House, at the southern corner, "for the Earl of Portsmouth." Close by is still the so-called Old Curiosity Shop of Charles Dickens,† a reputed relic of the Duchess of Portsmouth's dairy-house. Portsmouth-place, leading into Bear-yard, is marked upon the Ordnance survey as the site of Portsmouth House.

NO. 24, Southampton-buildings is about to be rebuilt. The house presents no features of particular interest in itself, yet is noteworthy for having been occupied, as we read, by Charles Lamb. Here, according to Mr. L. Hutton's "Literary Landmarks of London," he used to lodge, his landlady being Mrs. Buffam, when he visited the town after his removal, in 1826, from the then Colebrook Cottage, Islington. Hazlitt, who for a while lived at No. 9, Walker, the tailor's, and did some of his best work there, describes, in rapture, the Thursday evening parties at Lamb's; at the "Southampton" tavern, just opposite, he used to meet George Mouncey, Roger and George Kirkpatrick, Howe, Cruikshank, with other kindred spirits mentioned in his essay on "Coffee-house Politicians." The tavern and No. 9 were pulled down in 1882-3 for the rebuilding of Lord Radnor's property. On March 28, 1809, Lamb writes to Manning, in China: "Don't

* Nos. 50A, 56, 61, 62, and 63 (in 1885) have been rebuilt; the original elevations of Nos. 50, 54, 55, 59, 60, 64, and No. 2, remain, those of Nos. 51, 52, and apparently No. 53, are changed. As to No. 63, see our columns of Aug. 2, 1884.

† See the *Builder*, Jan. 5, 1884, and Jan. 10 last.

come any more to Mitre-court-buildings. We are at 34 (*sic*), Southampton-buildings, Chancery-lane, and shall be there till about the end of May; then we remove to No. 4, Inner Temple-lane, where I mean to live and die." But we observe that in his next letter to Manning, dated January 2, 1810, from No. 4, Inner Temple-lane, he speaks of "Mrs. Buffam that heard Hazlitt mention you." This apparent confusion is not noticed by Mr. Hutton in his sixth edition, 1888, whilst his description of the house clearly relates to that under review. We quote from the letters as printed in Talfourd's edition of Lamb's works, 1840, and the first letter we cite is similarly quoted in the "Literary Landmarks." It is said that Jacob, the Jew, on quitting Oxford *circa* 1670, opened in this street one of the first of the London coffee-houses.

"A MANCHESTER ARCHITECT" has been writing in the columns of the *Manchester Guardian* on the subject of architecture in Manchester, which he seems to think is not in a very flourishing condition. He considers there has been a great improvement in London architecture, and suggests answers to the following four questions, previously put in an article in the *Manchester Guardian*:—

1. "Why has there been no corresponding improvement in Manchester and Liverpool?"
2. "Is it that Manchester and Liverpool architects do not know what has been and is being done in London?"
3. "Or is it that they do not regard it as worth attending to?"
4. "Or, finally, is it the fault of the public, which will not have new ideas?"

The answers are what we should very naturally expect to find from any one who understood the subject. In regard to the first three, there are two classes of architects, those who care for it as an art, and those who look on it as a trade to make money by. The former do know and do care about architectural improvement elsewhere, the latter care for nothing except business returns for their labour. But, says the writer, "the chief reason why the architecture of Manchester has not improved is that the public are so little able to discriminate between what is really good and what is inferior or bad that the best and ablest architects are not duly encouraged." It might be more true to say not merely that the public do not know good architecture from bad, but that they do not *care* at all about it. That is the real obstacle in the way of improvement. If the public cared about architecture at all they would try to learn what is good and what is bad; but they are altogether indifferent; the most hopeless case of all. This is an evil nearly as much felt in London as anywhere. There has been a great improvement recently in house architecture in West London; but in the case of public buildings and business buildings and hotels there is little improvement. The "Manchester Architect" names another obstacle in the method of action of the merely business architects. "They watch sites," he said, "or they get sites into their own hands in such a way that it is difficult for anyone to build on the land in question unless this man is employed;" a kind of tactics not quite unknown in London also. Did not a City architect write a letter in our own columns one day, explaining some difference as to who was really the architect of a projected building, and how the property changed hands, "I going with the land"? We printed the remark without comment, but the writer would have been flattered if he had known how much amusement it caused privately, among some of the kind of architects who are not willing to "go with the land."

AT the Greenwood Cemetery, New York, a Chicago millionaire, Mr. Charles T. Yerkes, who made a great fortune out of the "surface car system" (whatever that may be), has had constructed for his eventual repose a massive and costly mausoleum in the form of a Greek temple of granite, at a cost of 40,000 dols. The design, of which a cut was given recently in the *New York World*, is a curious mixture of Doric pilasters and frieze with Ionic columns. There is a portico of four columns at each end, with pilasters in the rear and a solid rusticated wall at the sides. A special mode of construction has been employed in the roof, we are told, by which the granite slabs are locked together in such a way as to be absolutely immoveable, and to be quite impervious to rain. The builder boasts that it is the most solid structure in the world. Subdued light is to be admitted by stained glass; the entrance will be by heavy bronze doors. Above the entry of this Classic temple is inscribed the name "Charles T. Yerkes." The mixture of incongruous associations is amusing. Other successful heroes, however, have built their tombs in advance, and why not the "surface-car" man?

IT is arranged in connexion with the Hygienic Congress that any one purchasing a member's ticket, the cost of which is 1*l*., has also the privilege of purchasing a "lady's ticket" for 10s. This kind of arrangement is of course common enough in connexion with public entertainments of various kinds, the lady's ticket being left blank to be filled in with the name of the lady. The management of the Hygienic Congress, however, are apparently so afraid of the tickets being transferred, and so unwilling to trust to the honour of their subscribers in such a matter, that they have invented a new form which is certainly not a very polite one. Mr. John Smith (we will say) subscribes for a member's ticket and a lady's ticket, and receives in return two tickets marked respectively "Mr. John Smith" and "Mr. John Smith's lady." This may be a good way to induce people to pay for a second full member's ticket instead of a lady's ticket, for there are certainly some ladies who would not care to go about with a ticket describing them as "Mr. ——'s lady." It is a little bit of *gaucherie* which is not creditable to the management. Why could not they leave the ladies' tickets with a blank for a signature in the usual way?

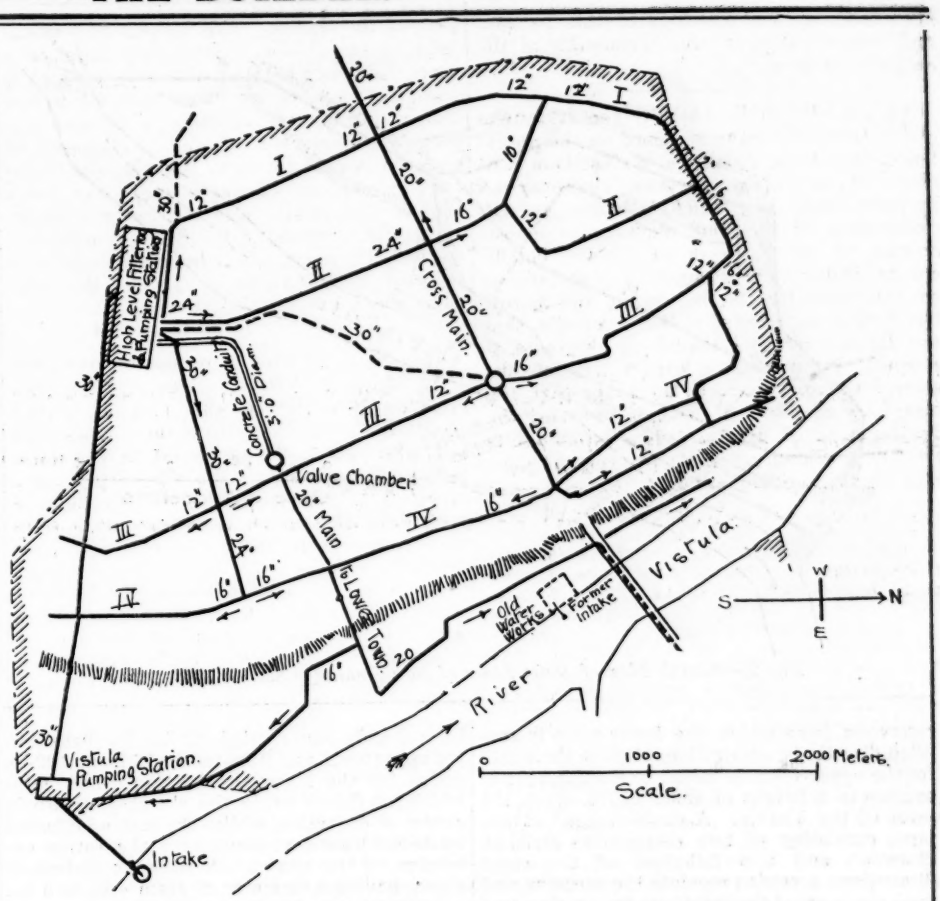


Fig. 1.—Sketch Plan of Mains, &c., for Water Supply, Warsaw.

WARSAW'S NEW WATER-SUPPLY AND DRAINAGE SCHEME.

IN a recent number we referred to the City of Warsaw as being the only town in Russia in possession of a modern scheme of water-supply and sewerage, and we are now able to give some particulars regarding these extensive works.

The population of Warsaw at present numbers some 500,000, a number which is showing a rapid annual increase. Until the works now in progress were commenced the whole drainage of the city (with the exception of a few lines in which sewers of old date and defective construction carried off some water into the river) consisted of a superficial network of gutters and ditches; whilst the inadequate water-supply, such as it was, taken from the river within the precincts of the town, was not only defective in quantity but also dangerously so in quality, being polluted with the sewage that ran into the river above the pumping-station, and not being sufficiently filtered. Thanks to the impetus given by the head of the municipal authorities, General Starynkewitch, a comprehensive scheme was worked out both for the water-supply and drainage of the city by Mr. W. Lindley, M.Inst.C.E., in the year 1878, and, after a tedious course of bureaucratisms combined with all manner of political, party, and other difficulties, this scheme was sanctioned by the Russian Government and put into execution under the direction of the sons of the above-named engineer, the actual commencement of the work dating some nine years back.

The City of Warsaw lies on the left bank of the Vistula, and is partly built on the foreshore of the river, which has a breadth varying from 500 ft. to 2,500 ft., with a level of some 20 ft. to 30 ft. above average water-height, and partly on an upper plateau which is at a level of about 70 ft. to 125 ft. This so-called upper town is the more important part of the city, and contains about 80 per cent. of the total population, and all the public buildings. In describing the works, it will be well to treat the water-supply and the drainage scheme separately.

The water-supply is taken from the Vistula, a short distance above the town, and is driven by steam pumping-engines to a high-level filtering and pumping-station, which is situated at the southern limit of the town on the above-named plateau, distant some 12,000 ft. from the "intake" pumping-station, and about 120 ft. above the river. At this upper station the water is filtered and collected in subterranean storage

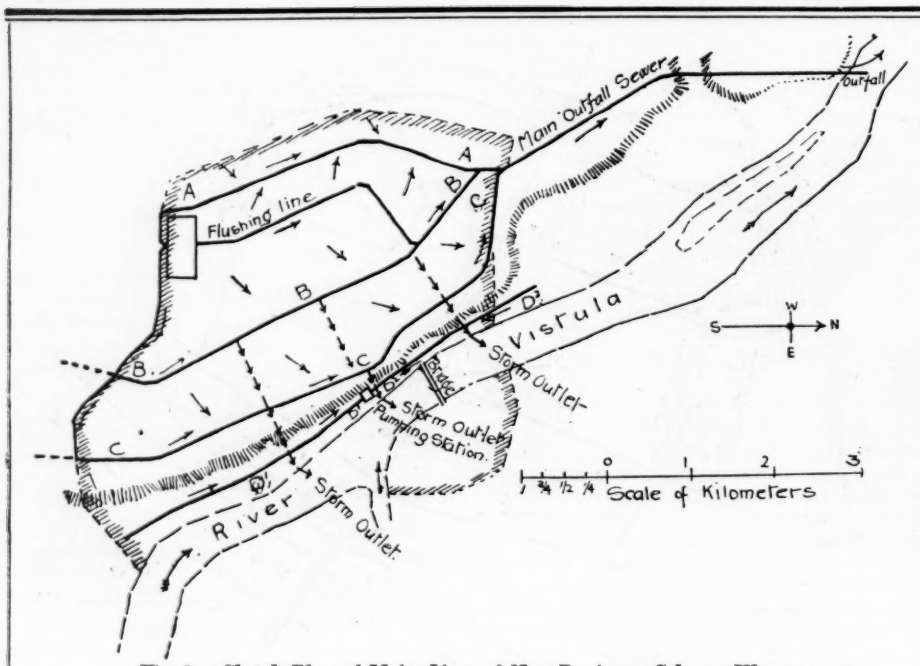


Fig. 2.—Sketch Plan of Main Lines of New Drainage Scheme, Warsaw.

reservoirs, from which the lower town is supplied directly by gravitation, whereas the water for the upper town is raised by a second set of engines to a height of some 210 ft. above the level of the Vistula. A double-legged stand-pipe, consisting of two rising tubes of 36 in. diameter, and two fall-pipes of the same dimensions, serves to regulate the pressure, and from the foot of the fall-pipes four mains, two of 30 in. and two of 24 in. diameter, carry the water into the upper part of the city.

The greater part, nearly two-thirds, of the proposed water-supply scheme has been carried out, and is in working order. On visiting the work so far completed, we find that it consists of a very long 36-in. suction-pipe from the "intake" proper to the so-called "intake" or Vistula pumping-station, in the engine-house of which (remarkable, by the bye, for the difficult foundation work which had to be done before erecting it) there is room for three sets of pumping machinery, of which only two are at present *in situ* and at work, each set for a supply of 600,000 cubic feet per twenty-four hours, and connected with the high-level filtering and pumping-station by means of a 30-in. force main. At this upper station a group of settling-tanks has been carried out in connexion with a group of filter-beds, each group consisting of six tanks or beds, and each filter-bed having a sand surface of 2,100 square mètres. These settling-tanks and filter-beds are subterranean, and show some interesting construction; the supports throughout are monolithic granite pillars, whilst the extensive scheme of vaulting with its complicated lines is in brick with granite centre rings. A clear-water reservoir, also subterranean and vaulted, containing some 400,000 cubic feet, acts as a compensator between the regular supply of the Vistula pumping-station and the filters on the one hand, and the fluctuating demand of the city on the other. The water for the supply of the lower town is taken from the clear-water main directly it leaves the filters, and is conducted by a conduit, in Portland cement concrete of 3 ft. diameter and 5,000 ft. length, to the edge of the upper plateau, where a valve-chamber receives the water at a level of about 110 ft., whence it is carried by a cast-iron main of 20 in. diameter to the lower town, and will eventually be taken across the river to supply the suburb Praga. For the supply of the upper town, an engine-house, similar to the Vistula one, likewise capable of containing three engines, has been erected; two engines are at work, the third is just being mounted. Each of these engines is capable of supplying 700,000 cubic feet per twenty-four hours, and raising this quantity from the average water level of the clear-water reservoir, 110 ft., to the level of the supply at the stand-pipe, 210 ft. The stand-pipe is placed in a red-brick tower of agreeable exterior, in the centre of which the chimney of the station forms the core, around which the four pipes above mentioned are enclosed in the annular space between centre and outside wall. Of the mains to be laid in the city, those marked Nos. II., III., IV. on fig. 1, together with the 20-in. cross main, have already been carried out for the benefit of the upper town, and likewise the 16-in. and 20-in. mains for the lower town. The other mains which are drawn out in the sketch-plan are in course of execution, whilst the mains indicated by dotted lines are intended for the future extension of the works. A network of branch pipes, having a diameter of from 4 in. to 8 in., supplies the various streets and alleys of the town. The total length of the mains (30 in. to 12 in. diameter) executed is 70,000 feet, and that of the branch pipes (8 in. to 4 in.) is 270,000 ft., this sufficing to supply more than 60 per cent. of all the streets, the remaining ones of which will have their lines laid within the next three years.

The drainage scheme consists of a series of intercepting sewers which are indicated in the sketch-plan, fig. 2. The western line, marked "A," follows the valley along the western limits of the town; the eastern line of the upper system, marked "C," follows the most easterly street on the plateau, and intercepts the sewage from the lower town. A further line passes down the centre, and is marked "B" on the plan; and a ridge line, which starts from the high-level pumping-station of the water-supply, where it is furnished with flushing water, secures a powerful and thorough system of flushing for all the branch sewers passing on the left to the west main line "A," and on the right, to the east, to the main lines "C." The intercepting sewers unite at a point indicated to the north of the city, at a level of 60 ft. above the river, and the water is then carried off by means of a main outfall sewer 5 ft. 4 in. by 7 ft., having a length of 15,000 ft. and a gradient of 1 in 250, to an outfall into the river some three to four miles below the town. The main intercepting sewers vary in their dimensions from 2 ft. 8 in. by 4 ft. to 4 ft. 8 in. by 6 ft. 4 in., and in their gradients between 1 in 250 and 1 in 1,500. The storm water will be passed out by the storm outlets indicated. Up to the present time, the main outfall sewer and the intercepting sewers A, B, and C have been carried out with a total length of 70,000 ft., together with branch sewers (of which the chief part measures 2 ft. by 3 ft.) to a total length of about 65,000 ft. The lower town has not yet been taken in hand; the sewage in this part of the city is to be collected by the two main lines D and D_2, and the pumping-station of the former defective waterworks, mentioned above, used for raising it into the intercepting sewer C, thus carrying it out with the rest to the main outfall.

The whole of the erections in connexion with these extensive sanitary works appear to have been done with the greatest care, and everywhere both civil engineer, mechanical constructor, and architect will find points of interest. Everything that pertains to building operations certainly appears to have been done in the most model manner, and the newly-erected buildings must be certainly a surprise for the inhabitants of the city, who, up to the present time, have seen nothing but stucco fronts in their streets, scarcely ever a brick or a piece of freestone. On these new buildings one finds that red brick and stone dressings (the design in a Renaissance style) are to form the typical exterior of the erections in connexion with the works, both these materials having to be imported at an enormous expense from over the German frontier.

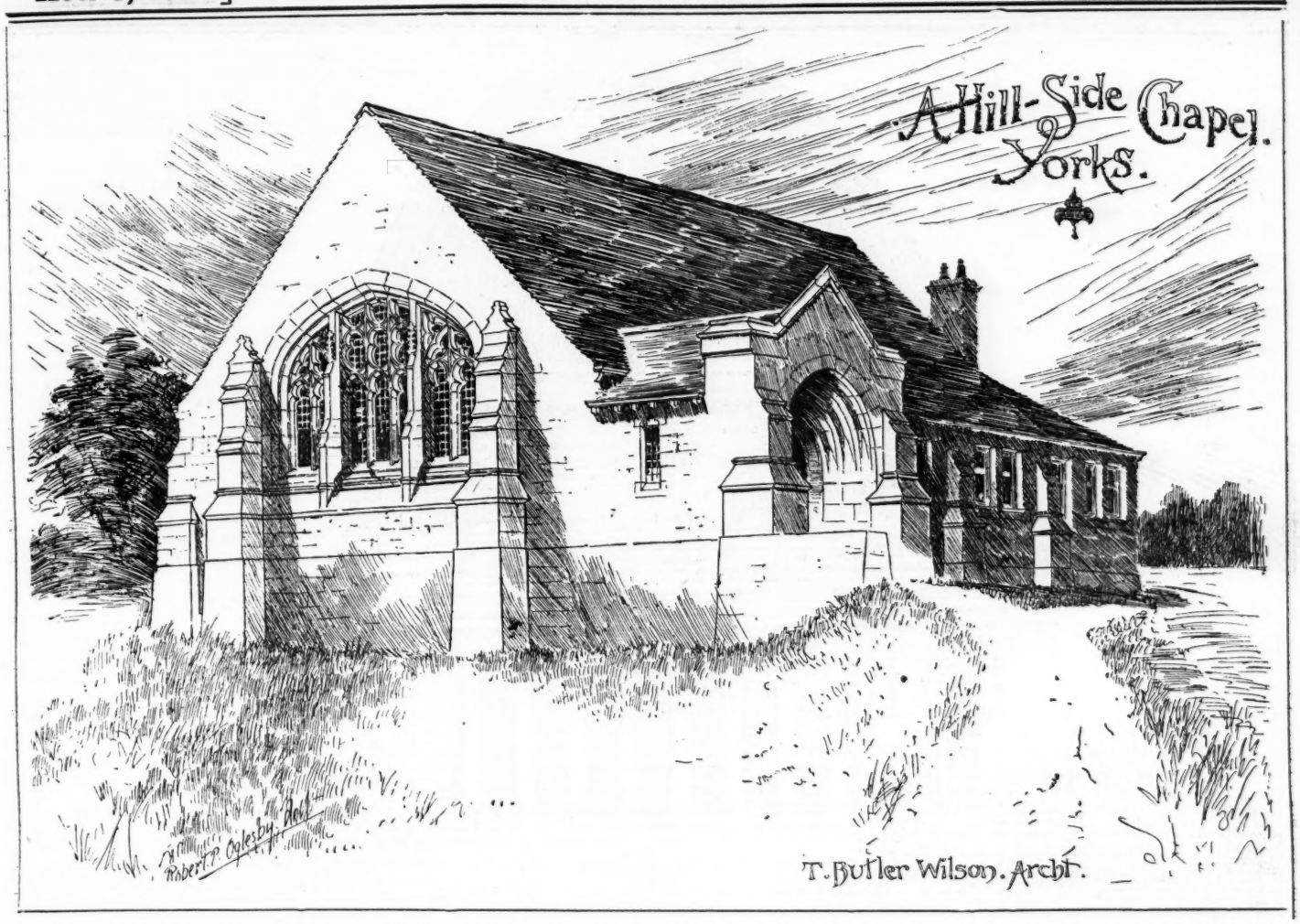
As regards the expenditure, the present total reaches 7,000,000 roubles, or about 700,000*l*. A new grant, which will be used during the next year, amounts to 4,000,000 roubles, and the original estimates for the works, drawn up in 1878, came to 15,000,000 roubles.

The present average supply of water to the town is about 600,000 cubic feet, the maximum demand 700,000 cubic feet to 800,000 cubic feet, this including all water for street-cleansing, fire brigade, and other municipal purposes. The lately-granted extension of the works will increase their capabilities to about 1,200,000 cubic feet or 1,400,000 cubic feet a day.

The revenue is, at present, 440,000 roubles per annum, and the working expenses of the waterworks and sewers combined 170,000 roubles, so that already a surplus of about 4 per cent. on the capital expended has been obtained; all water for public purposes, public buildings, hospitals, &c., being given gratis. The city is sole proprietor of the works, so that, as the demand for water is daily increasing, it will soon have a very considerable net revenue. The water is sold by meter, and for domestic supply costs 11 kopeks per 100 wedro, equivalent to about 10d. per 1,000 gallons; but industrial establishments get their water at a much cheaper rate.

SOCIETY FOR PRESERVING MEMORIALS OF THE DEAD.

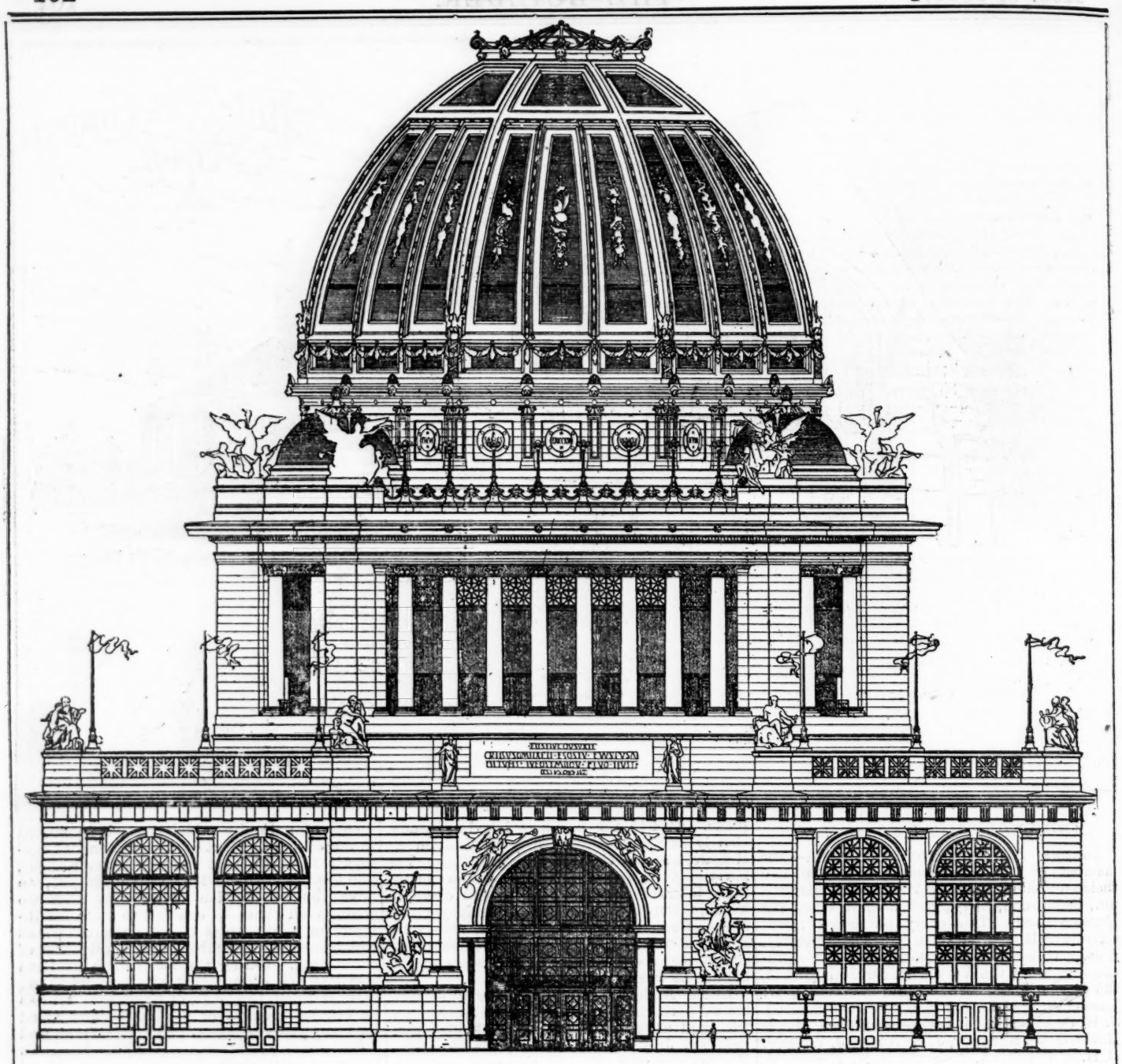
THIS society was founded some ten years ago chiefly for protecting and preserving the monuments and tombs in our churches and churchyards. The society, during its short existence, has done excellent work, and has prevented the destruction of many a memorial which otherwise would have perished at the hands of the churchwarden, parson, or restorer. On Thursday, July 30, the members of the society made an excursion into the County of Hertford, and visited the following places:—Standon, Braughing, Bishop's Stortford, and Sawbridgeworth. The first-named is a small village on the Buntingford Branch of the Great Eastern Railway. The church is remarkable on account of the elevated position of the altar, which is raised thirteen steps above the floor of the nave. The reason for this peculiarity is because the church is built on the slope of a hill. There are some interesting monuments to the Sadler family, who formerly lived at Standon Lordship, and an important brass to Alderman Field and his son, dated 1477. On the slab are the arms of the City of London and of the Staple of Calais. The alderman was a member of the Mercers' Company. Braughing dates from the Roman occupation of Britain. An important station formerly existed close to the present village. The church is dedicated to St. Mary, and, with the exception of some modern work, is entirely of the fifteenth century. The chief monuments are to the memory of John and Charles Brograve, of Hamels Park; Augustin Stewarde, dated 1597; and a brass to Barbara Hanchett, dated 1561. The Brograve monument is especially worthy of minute attention. Bishop's-Stortford Church was visited by the party, under the direction of Mr. J. L. Glasscock, the editor of "The Records of St. Michael's Parish Church, Bishop's Stortford." The building throughout is of the Perpendicular date, and is most picturesquely situated on rising ground in the centre of the town. It is not rich in monuments, but has an interesting history. A local tradition says that Editha, the wife of Harold Infelix, is buried in the nave of the church. Some years ago a coffin of Norman times was found and was supposed to contain her remains. Sawbridgeworth, a small village about four miles from the latter place, is celebrated for its brasses to the Leventhorpe and Jocelyn families. Some of the former are most rich in design, but are too well-known to require any description here. Within the communion rails is a fine altar-tomb under a canopy of four arches. At the back, against the wall, are the matrices of some brasses. The inscription has disappeared, and, unfortunately, no record remains to say to whose memory this beautiful monument was erected. The party was conducted over the church by the Vicar, the Rev. H. A. Lipscomb, who fully explained the building and monuments.



ARCHÆOLOGICAL SOCIETIES.

SURREY ARCHÆOLOGICAL SOCIETY.—The members of this Society and their friends had their annual excursion on Wednesday, the 22nd ult., Charlwood, Leigh, and Reigate being the places visited. The party numbered about sixty, and Redhill was the place of assembly. Among those who took part in the day's proceedings were the Very Rev. Dr. Hall (Iowa), the Revs. H. F. Lewis (Vicar of Horley), W. Lucas (Vicar of Leigh), E. Gibson (Charlwood), J. W. Pickance, R. M. Blakiston, Messrs. Ralph Nevill, S. W. Kershaw, J. L. Andre, J. Watney, C. H. F. Lewes, A. J. Style, S. H. Elyard, E. Cleghorn, T. Howse, J. W. Blake, G. C. Curling, H. Gough, J. Corry, W. F. Potter, Ekyn Potts, E. M. Shadbolt, W. P. Ivatts, the hon. secretaries (Mr. Mill Stephenson and the Rev. T. S. Cooper), and a number of ladies. There were five pair-horse breaks provided for the conveyance of the party, and a start was made at half-past twelve. The weather presented a threatening appearance at first, and slight rain fell on starting. Fortunately, this was speedily succeeded by genial sunshine, and the drive to Charlwood—a distance of eight miles, and which embraces some charming country—proved a great treat. Arrived at Charlwood, the attention of the party was invited to the quaint old parish church, built probably in the thirteenth century. The mural paintings which decorate the south wall are an interesting feature, and the screen presents a splendid example of wood-carving. A paper descriptive of the church was read by Mr. J. L. Andre, F.S.A. A visit was then paid to Mr. Wilkins' house, near the church. Mr. Ralph Nevill, F.S.A., in describing its principal features, said that the building was a very interesting specimen of an Elizabethan house, unusually complete in design and apparently all of one date. The journey was resumed at three o'clock. The parish church of Leigh was inspected, and some notes of Mr. F. C. Lees, who restored the church some time ago, were read by Mr. Mill Stephenson. The existing building dates from the fifteenth century, when the old church must have been almost entirely re-built. The party next proceeded to Leigh-place. The house, which is surrounded by a moat, possesses an interesting old hall with immense fire-place, whilst upstairs there is an old mantelpiece bearing an inscription, said to have been written by some prisoner or priest hidden there. Mr. J. Watney, F.S.A., read some notes on the history of Leigh-place. At 4.15 the members left Leigh, and, shortly before reaching their destination at Reigate, a severe thunderstorm came on. The party speedily betook themselves to the exceedingly interesting Reigate Castle and caves, to which, through the courtesy of the Mayor and Corporation, members and their friends were admitted free. The caves were illuminated, and a paper dealing with the history of the Castle was read.

KENT ARCHÆOLOGICAL SOCIETY. — The annual gathering of the members of this Society was held at West Malling, on Monday and Tuesday, July 27 and 28. The weather on Monday was very wet, and this fact, no doubt, prevented many from attending who follow the Society in its yearly rambles in search of fresh items of interest from an archæological and antiquarian point of view, the number present being about 140. The last visit of the Society to Malling was in 1869. The usual preliminary meeting was held at the Assembly Rooms at 11 o'clock on Monday morning, where a temporary museum, under the superintendence of a local committee, had been erected. Earl Stanhope (Lord Lieutenant of the County) presided, and there were also present the Revs. J. H. Timins, C. H. Fielding, W. Gardner-Waterman, H. Hammond, and G. M. Livett, Colonel Hughes, M.P., Colonel Hartley, Colonel E. T. Luck, and Messrs. E. P. Loftus Brock, F.S.A., G. M. Arnold, George Payne (honorary secretary to the Society), Randall Davis, G. K. Essell, J. G. Norwood, G. Clinch, and many others. Mr. G. Payne read the annual report, which was as follows:—"It is now twenty-two years since the Society visited Town Malling, and the Council has much gratification in presenting to-day its thirty-fourth annual report, which is one of increasing prosperity. Since the last annual meeting death has removed from our Society the Earl Granville, K.G., one of its most distinguished Vice-Presidents. We also have to deplore the irreparable loss of Charles Roach Smith, Esq., F.S.A., one of our honorary members. His eminence as an antiquary need only to be referred to here, as his fame was well known throughout Great Britain and the Continent. During his long life his valuable services were ever freely at the Society's command, as the volumes of our Archæologia bear witness. To them Mr. Roach Smith contributed many learned papers, and the members of the Society have on several occasions listened with pleasure and profit to his able discourses on the various monuments of antiquity which have been visited in the county of Kent during our annual meetings. Although that voice is for ever silent, and the hand can no longer wield the pen, we have the gratification of knowing that we shall at all times be enabled to turn for instruction to the pages of his numerous works which treat so exhaustively of the antiquities of our county. During the last month we have also lost one of our most esteemed members, G. E. Hannan, Esq., J.P., of Ramsgate. He was an original member of the Society, and acted for many years as a member of the Council and as an honorary local secretary. By Mr. Hannan's lamented death the Society loses a valued friend and staunch supporter. Many other valuable members have been removed from our ranks by deaths or withdrawal, but in spite of these drawbacks the Council has the pleasure to announce that during the past year thirty-two new members have been elected, bringing the total up to 880, and eleven candidates await election at your hands to-day. The members will be gratified to learn that an index has been prepared for publication of the whole eighteen volumes of "Archæologia Cantiana." The honorary editor is now engaged in going through the vast mass of manuscripts. Some folios are already in type. It is proposed to re-number the index volume xix., and the twentieth volume of "Archæologia Cantiana," for which material is in hand, will follow in due course. The Council has to announce with the most profound regret that the Society's valued and honorary editor, Canon Scott Robertson, has expressed a desire to relinquish entirely those duties which he has performed for so many years with such remarkable energy and consummate skill. The alarming illness with which he was afflicted some time ago, and which deprived the Society of his valuable services as honorary secretary has, alas, now rendered it expedient that Canon Scott Robertson be relieved of the editorial duties. The Council is, however, not without hope that some arrangement may be made which will enable him to still retain the office, providing skilled assistance be forthcoming from the ranks of the Society. During the past year considerable progress has been made by the Society's rooms at the Maidstone Museum. The arrangement of the library and collections is now finished, and at the last meeting of the Council complete catalogues were laid upon the table. It is hoped in due time these may be in the hands of members in a finished form. The opening of our rooms at



Chicago Exhibition: Façade of Administration Building.

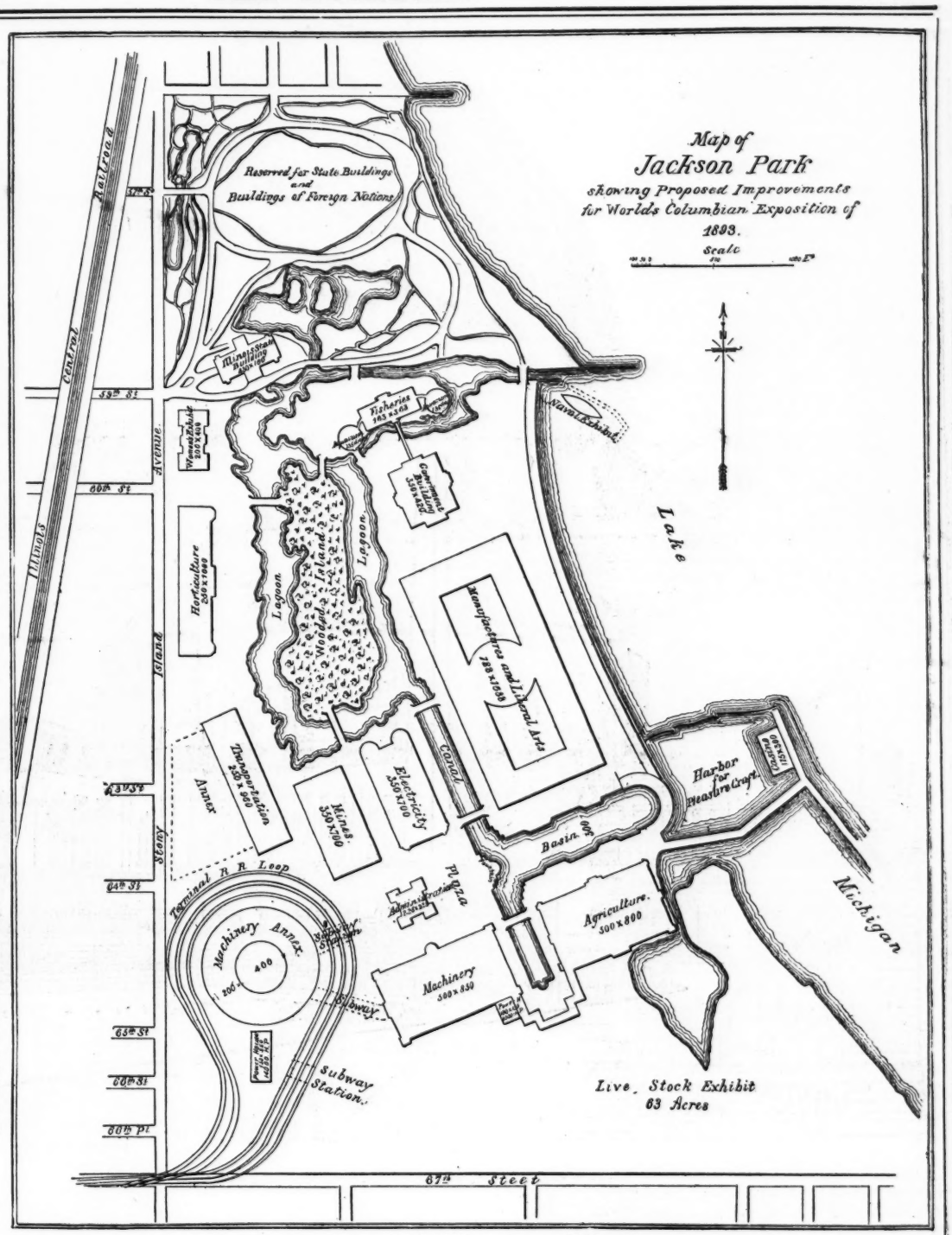
Maidstone every Thursday has already produced good results in the loan of valuable antiquities for exhibition, while gifts of others have been promised. The presence of your honorary secretary there on Thursday in each week has enabled several members to confer personally with him on various matters connected with the archæology of their respective districts, which cannot fail to be of ultimate benefit to the Society. The financial position of your Society is everything that could be desired. When the last meeting was held at Malling there was a sum of 295*l.* 3s. 3d. to the credit of the Society; to-day finds us with a balance at our bankers of 764*l.* 11s., although during the twenty-two years no less a sum than 5,196*l.* 1s. 3d. has been expended on the publication of 'Archæologia Cantiana' alone. It may not be uninteresting to you to learn that the total cost paid for printing, publishing, illustrating, and binding the entire eighteen volumes has amounted to 7,583*l.* 17s. 11d. At the meeting held in this room in 1869 the death of the Rev. Lambert Larking was foremost in the minds of all present. After this long lapse of time we revisit the scene of his earlier and later years, and review with pleasure and pride the successful career of our society, of which he was the founder, and for which he laboured so patiently in order that it might be built up upon a firm and lasting basis."—Mr. G. M. Arnold moved the adoption of the report. The motion was seconded, and the report was unanimously adopted. The auditors were re-elected, and the retiring members of the council were re-appointed auditors. The members then visited Malling Abbey, the history of which was given by the Rev. C. H. Fielding, M.A. Mr. E. P. Loftus Brock, F.R.I.B.A., F.S.A. (hon. sec. of the British Archæological Association), who conducted the visitors round the building, pointed out the architectural details. From here the party proceeded to Gundulph's Keep, or St. Leonard's Tower, which was inspected by kind permission of Miss Savage. After luncheon the party assembled at Town Malling Church, which was described by the vicar, the Rev. J. H. Timins, M.A., and then were conveyed to East Malling Church, which was described by Mr. Loftus Brock. The annual dinner of the Society was held in the Lecture-hall, Town Malling, in the evening. The evening meeting took place in the Assembly-room. "Notes on the History of Malling" was the title of a paper read by the Rev. C. H. Fielding, M.A. Mr. Payne gave a sketch of "The Pilgrim-road and other ancient roads in the Malling District." The members assembled in the High-street, Town Malling, on Tuesday morning, under the direction of the Rev. W. Gardner-Waterman, and proceeded to Bradbourn Place, the ancient seat of the Twisdens, at East Malling. The house, which is built in the Queen Anne style, was inspected under the guidance of the Rev. J. Francis Twisden, M.A., who pointed out the most interesting of the hundreds of pictures and family portraits in the place, and who also gave a short history of the house under its various owners. The old carved oak staircase was much admired. The party next proceeded to Leybourne Castle, the ruins of which and their history were explained in a paper written by the Rev. J. H. Timins, vicar of Malling. Leybourne Church adjoining was next visited, and the history explained by the Rev. C. C. Hawley, M.A., the rector. There are still traces of Norman architecture in the church, and the south wall is undoubtedly the original Norman wall. There is some good stained glass in this church, and behind the organ was shown the niche in the wall in which was found, some years back, a leaden casket and what was supposed to be the heart of Sir Roger de Leybourne, an ancient proprietor of the castle. The company then returned to lunch at Town Malling, and afterwards drove to Trottescliffe (or Trosley) Church. The party first inspected the exterior of the church, which is of Early Norman work. A great quantity of tufa stone is used in the building, and the windows are of Norman architecture, but without sills. The outside surface of the west wall of the church is faced with squared flints, which give the wall the appearance of being incrusted with glazed tiles. This work cost 800*l.* to complete, and took some years to carry out. The majority of the members then went inside the edifice, where Canon W. A. Scott Robertson, M.A., continued his description of the church and its history. In the meantime Mr. George Payne, the honorary secretary, led a smaller party to the Druidical remains at Coldrum. These lie to the eastward of Trosley, and about 300 yards south of the Pilgrims' Way, and consist of about nineteen massive stones lying in a circle on the surface, and partially buried. The two sides of the dolmen are still standing, and are very massive stones, which have the appearance of having been quarried through; the top stone has broken, and fallen down in the middle. The mound on which the monument stood has

CHICAGO EXHIBITION BUILDINGS.

We give some illustrations of the buildings in progress for the Chicago Exhibition, and also a general plan of the laying out of the ground for an enterprise which the Americans are determined shall attract the attention of the world. The specially American type of architectural development does not seem to be much represented so far; the only example of it to be noticed in these illustrations is the round-arched entry, of low proportions and rich decoration, in the centre of the Transportation building. This is to be elaborately enriched with carvings, bas-reliefs, and mural paintings. The remainder of the building is simple and suitable in its architectural treatment, and a good specimen of a temporary exhibition building.

The Administration building seems to have been somewhat suggested by M. Bouvard's dome at Paris, the façade is quieter in detail, but at the same time deficient in that life and vigour which the French know how to impart to the details of such a structure, and which we cannot hope to meet again at Chicago. The façade is however dignified and pleasing and suitable to its position. The dome is 120 feet in diameter and 260 feet high.

The façade masking the machinery hall is very ambitious, for a temporary exhibition building, though it shows mostly only the adaptation of well-worn architectural features; there is some novelty in the finish of the towers. However, it is an effective piece of architectural scenery, and gives some idea of the scale on which the exhibition is to be carried out.



Chicago Exhibition: General Plan.

been partly dug away, and many of the stones have fallen from their original position, and been used for repairing the roads, buildings, &c., though they number about forty altogether. Mr. Payne explained the usages to which such monuments were put by the ancient Britons. The two parties then met outside the church and proceeded to Offham Church. Addington Church was in the programme, but owing to lack of time it had to be missed. Offham Church was described by Canon Scott Robertson, and is a Norman structure. It contains Norman windows, and traces of others: the original Norman chancel arch can still be traced, and traces of Norman architecture are visible in the south wall. In the thirteenth century an aisle was built on to this wall, but it was subsequently removed, and the masonry of the arches is still visible. There were two altars in the nave. There is a piscina in the south wall, and a receptacle for holy water near the entrance. The return journey was then made *viâ* Malling to Maidstone. The weather throughout the day was beautifully fine, and fully compensated for the inconvenience of the previous day.

New Parish Church, Dulwich.—In competition with five London architects, Messrs. Oliver & Leeson, of Newcastle, have been awarded the first prize for their designs for a new church at Dulwich. The Committee has also entrusted them with the execution of the work. The church will be in the Perpendicular style and will accommodate 800 persons.

Illustrations.

DESIGN FOR PUBLIC LIBRARY AT AYR.

This design was submitted by Messrs. Morris & Hunter in a competition for the building, and the drawing from which the illustration is taken was exhibited in the Royal Academy of this year.

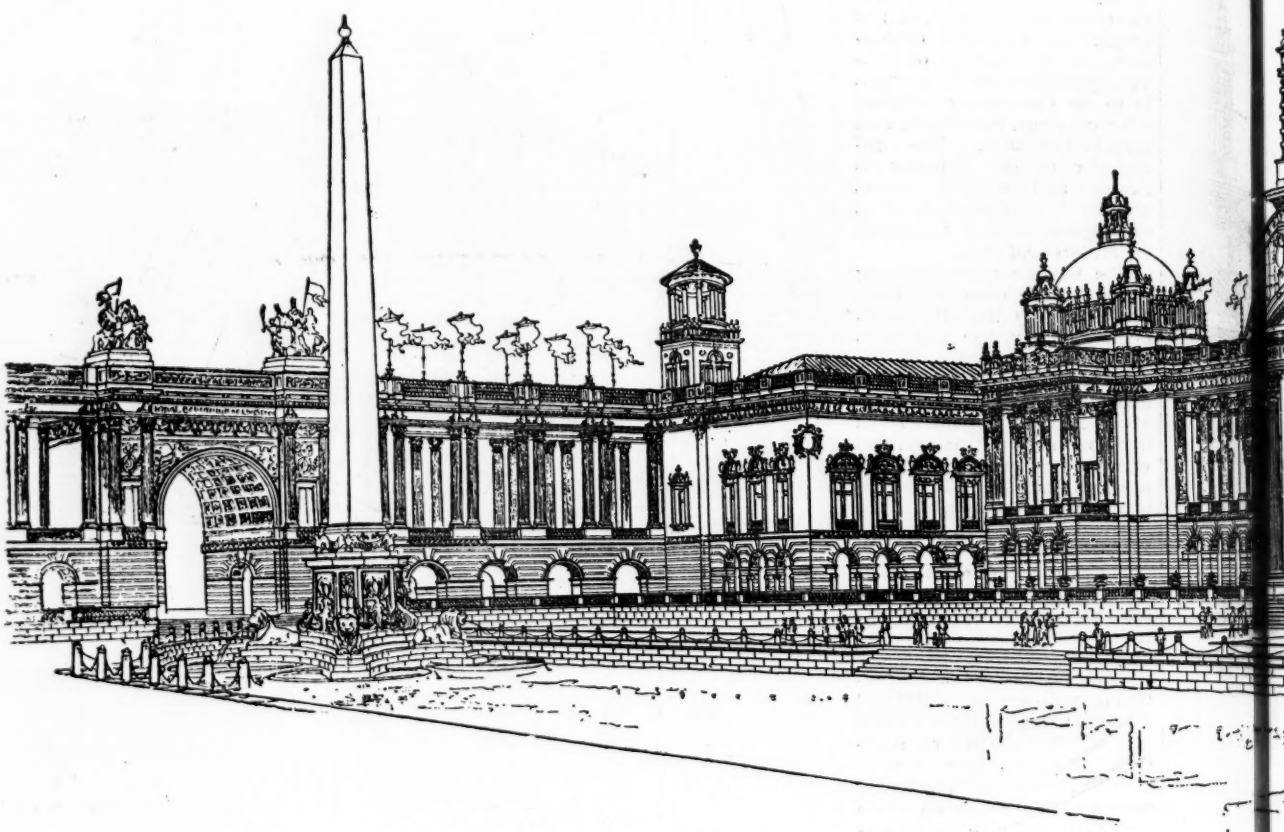
The whole of the library accommodation is arranged on the ground floor,—namely, lending library, reference library, and reading-rooms, so that the librarian may have full control over each of these departments; and these rooms when so grouped together require a smaller working staff of assistants,—two important points considering the smallness of the sum available to cover working expenses. On the first floor is the art gallery and museum. These rooms practically form one large gallery, 90 ft. long by 30 ft. wide, with a continuous semi-circular ceiling about 25 ft. high. On either side of the staircase is a panelled oak screen about 8 ft. high. It was intended that the pictures should be hung on screens placed at right angles to the side windows, after the manner adopted in the National Portrait Gallery, Edinburgh.

The whole accommodation provided was governed by the conditions of the competition, but it was the intention of the authors to afterwards modify the plans so as to bring them more into harmony with the views of those charged with the administration of such buildings, whose practical working experience provides the most reliable guidance for their convenient arrangement. For this purpose it was intended that the ladies' reading-room should be thrown into the space of the general reading-room (special tables being reserved for ladies' use), thus forming one large, square, well-lighted apartment. This arrangement for small libraries not only simplifies supervision, but also effects a saving in the number of papers to be provided. For similar economic reasons the reference library counter was placed contiguous to that of the lending library, so that both could be worked together, and an interchange of books from their respective book stores effected; the average number of reference library readers in libraries of a similar size being, at a full computation, about two per hour.

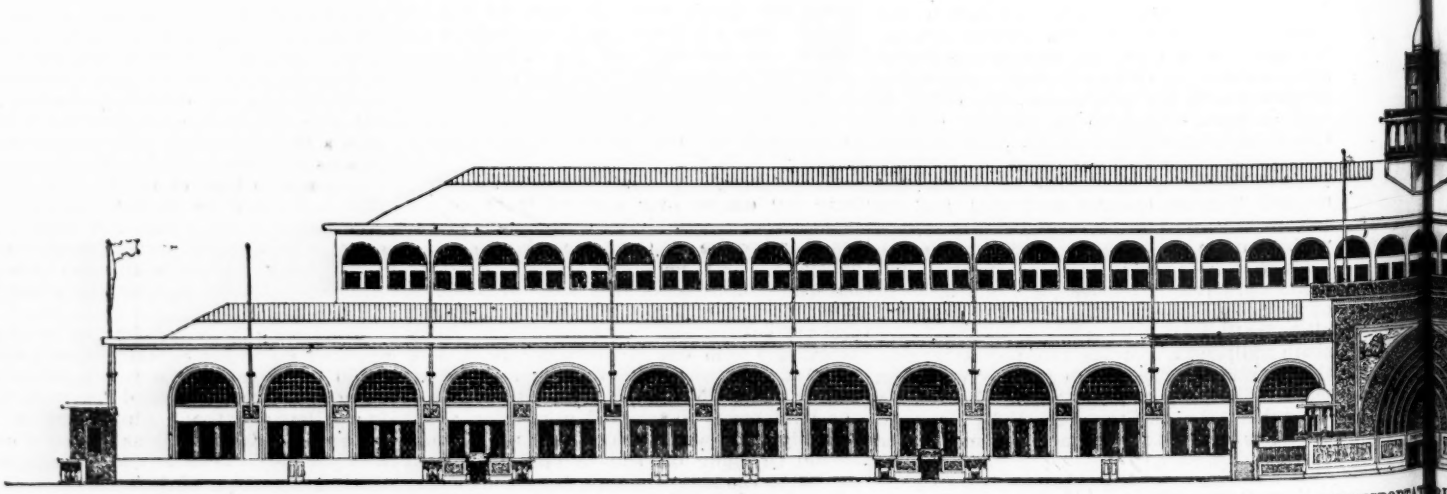
Seats were provided for 166 readers, and shelving space for 30,000 volumes; but these could be increased by a future extension, and 48 additional seats gained for readers; while in a gallery over the lending library accommodation for 15,000 additional volumes could be obtained without in any way interfering with the lighting of that department.

The librarian's house contains six apartments, arranged on three floors.

The elevations were governed by the position of the building, and the principal points from which it would be seen. It was intended that the high-pitched roof surmounted by the tall flêche should mark a conspicuous point in the town when seen from the surrounding country.



ENTRANCE TO MACHINERY HALL.



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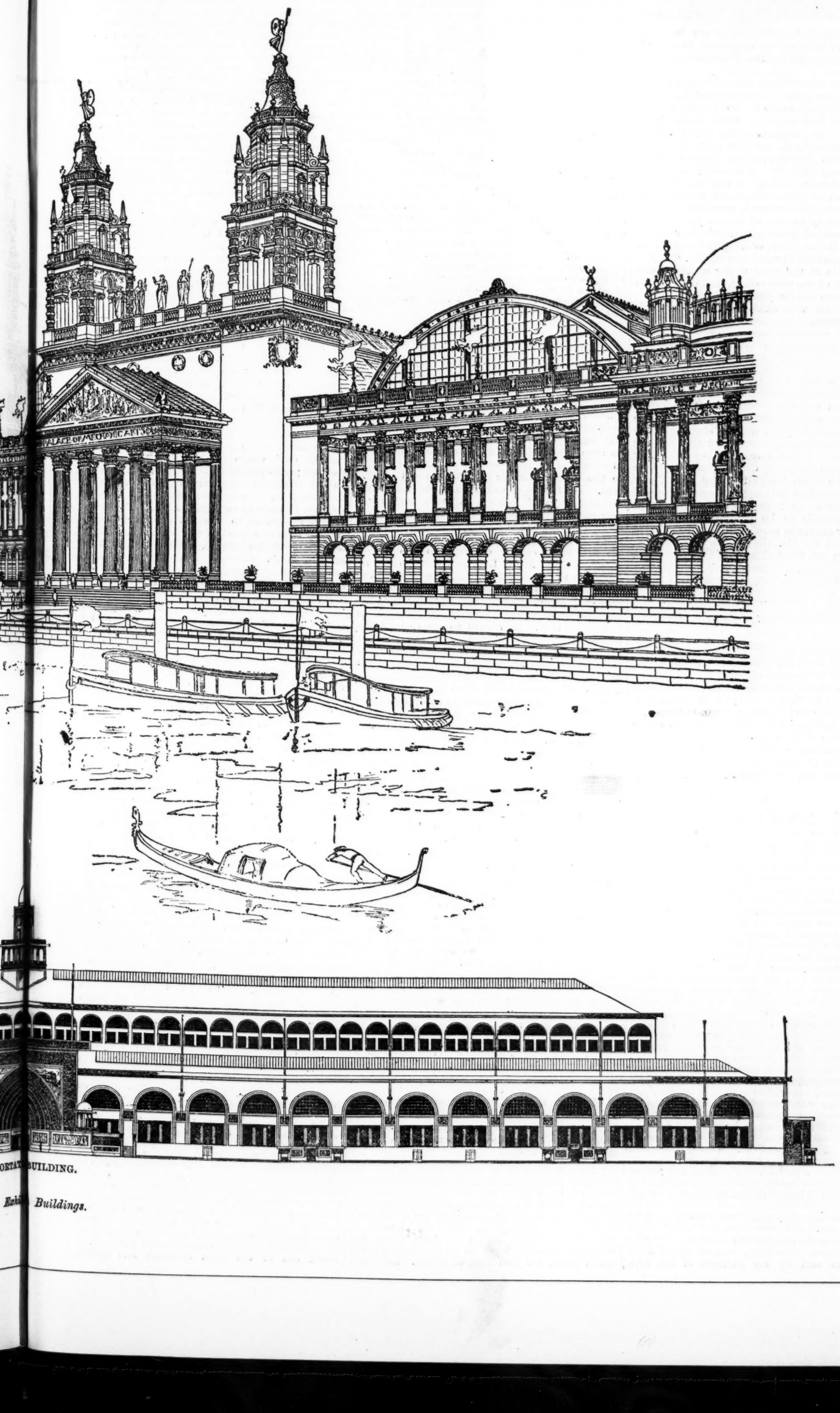

UILDING.

Buildings.

COMPETITIVE DESIGN FOR E. WINDOW, ST. MARGARET'S CHURCH, LOWESTOFT.

The subject of the window is the *Te Deum*. In the centre light of the upper tier Our Lord, enthroned, attended by the four archangels in outer lights.

Below are represented the "Glorious Company of the Apostles" (St. Peter and St. John); "The Goodly Fellowship of the Prophets" (St. John Baptist and Isaiah); "The Noble Army of Martyrs" (St. Stephen as the Proto-Martyr, and St. Edmund, K. and M., as the great East Anglican Martyr); "The Holy Church" (St. Ambrose and St. Augustine, the joint authors of the *Te Deum*). In the centre lights St. Margaret, to whom the church is dedicated.

In the principal tracery openings are the remaining eight orders of angels (archangels being represented below), and the four beasts around the throne (Rev. iv.). The "Amen" on the small scrolls is in reference to Rev. v., 14.

The angels in the four upper openings are independent of the nine orders, and bear scrolls and texts from the *Te Deum*.

The drawing was exhibited in this year's Royal Academy.

HOUSE AT COPSALE, NEAR HORSHAM, SUSSEX.

The roof is tiled with red tiles and the upper portion of the walls externally tile-hung. The lower portion and the gables are rough-casted. The chimneys are red brick. Red brick is also used for the ground-floor walls of stable. Above that it is rough-casted, with red tile-hanging in the gables. In the house, on the first floor there are nine bed and dressing rooms, three bath-rooms (wisely insisted on by Mr. Chapman), &c., with box and cistern rooms in the roof (central part). All the woodwork (except doors) externally to be painted white. The panels over entrance porch have been designed and modelled by Mr. Geo. Frampton. Mr. F. M. Simpson, of Westminster, is the architect, and Mr. P. Peters, of Horsham, the builder.

The drawing was hung in this year's Royal Academy.

ST. PETER'S CHURCH, BUSHEY HEATH, HERTS.

A description of this building was given in our issue of July 25, when we published the interior view of the new chancel.

The parts already erected consist of chancel, 32 ft. long by 21 ft. 6 in. wide; organ-chamber, 13 ft. by 10 ft.; and clergy and choir vestries.

The new building was consecrated on June 8 by the Bishop of St. Albans. Mr. James Neale, F.S.A., of London, is the architect; and Messrs. Norris & Sons, of Sunningdale, are the builders; the gasfittings are by Messrs. Potter & Sons, of London.

"BEAN-FEAST."

Although an old custom, there are many objections to the "Bean-Feast" as at present organised. Perhaps the habit of soliciting donations from other firms is one which most principals would like to see done away with. The employés who benefit most from these are not always those whose services are the most valued. The "Bean-Feast" too often ends in quarrelling and unpleasantness. For this reason the more intelligent of our mechanics sometimes prefer to spend their holiday quietly with wife and children. Then the money, often given with a kindly spirit, goes past those who were intended to benefit by it. Messrs. R. Waygood & Co., lift manufacturers, London, determined this year to see whether something could not be done to replace the time-honoured "Bean-Feast" by a holiday spent in a manner which all could enjoy. It was felt if they refused to allow their men to apply for donations from those with whom they did business, some *quid pro quo* must be offered. So the firm resolved to pay all expenses. Then came the question of refreshments. As an experiment, these were to be strictly of a teetotal nature. At 10.30 a.m. the *Redfern* left London Bridge with about 400 passengers on board. The 3rd West Surrey brass band accompanied the excursionists. The men had been invited to bring their wives and children, but only a few availed themselves of the privilege. Some, doubtless, thought that, with the best intentions, the firm might not be in a position to guarantee the perfect behaviour of all under the novel circumstances, but the result proved that there was no occasion for this caution.

At one o'clock Richmond was reached, and all at once proceeded to the "Castle Hotel," where dinner was served; about 430 sat down. Whilst coffee and cigars were being handed round, a few words were said by the partners of the firm, Messrs. Walker, Nicholson, and Okeden, expressing much pleasure at the hearty response given to the invitation. A telegram was read from the absent partner, Mr. C. Day (who was in the country holidaying), wishing all a happy day. There were also present Mr. J. M. Day and Mr. W. R. Green, the senior partners, who have recently retired. In the course of some remarks, Mr. Green said he had doubted the very possibility of having such a gathering under such circumstances, but he wished to say he had been mistaken, and was delighted to see the number present and the enthusiasm manifested. During the afternoon the cricket match, "Office *v.* Works," resulting in a win for the former, attracted a good deal of attention, and those not interested in cricket enjoyed a drive in the park or a row on the river, brakes and boats having all been provided. At six p.m. tea was served at the hotel, and so well had the party kept together that the number was within six of those who had sat down to dinner, after allowing for one or two who had left early by train. No intoxicants were supplied on the steamer, yet all seemed to enjoy themselves, both going and returning. [The foregoing account is supplied by Messrs. Waygood, with a few omissions for the sake of brevity. We give it as an example of an apparently very successful attempt to provide a holiday of a sensible and healthful description.]

MAGAZINES AND REVIEWS.

Last month the magazines were full of articles on art, an impetus being given to the subject by the exhibition period. This month there is naturally a falling off in this kind of interest. *Macmillan* however, publishes an exceedingly well-written article by Mr. A. E. Street,—well written both in a critical and literary sense,—on the subject of Westminster Abbey, of course in reference to the recently-proposed addition to the Abbey and the Report of the Commission. Mr. Street observes that there are two distinct ways of looking at the scheme for a new monumental chapel; that which regards it as an addition to the Abbey, or that which considers it as an entirely separate provision; but his article is chiefly directed to the Abbey schemes. Mr. Shaw Lefevre's scheme for an immense monumental chapel at right angles to the Abbey he considers one of the most undesirable propositions ever put before the public; but that, as he says, is altogether out of sight or possibility now. In regard to the various proposals for a smaller south-eastern chapel connected with the Abbey by a cloister round the Chapter House, Mr. Street says, pull down the houses which shut out the Abbey, by all means, but do not immediately close it in again by a new building. He does justice to the suggestion made in the *Builder* for connecting a new north aisle with the church (see *Builder* for Dec. 27, 1890, p. 492), by taking out the stained glass in the north aisle of the nave, refixing it on the opposite side of the new aisle, and leaving the arches open between the old and new building, and observes that such a treatment "has ample precedent in old work." He appears to sum up however in favour of the "Refectory scheme," apparently on the ground that it would not visibly alter or interfere with the appearance of the Abbey Church. In conclusion, Mr. Street says:—

"Give us a new refectory, such as the actual report of the Commission suggests, restored for another and higher purpose than that which its founders contemplated; give us a chapter-house freed from accretions, the squalor of which can hardly be matched in the neighbourhood of any other great church; and we shall say that the common altar of Use and Beauty has been crowned with an acceptable offering on which the fire from heaven will not be called down in vain."

We do not quite see the meaning of the latter metaphor, but the article in general is of an eminently common-sense character.

Scribner has a pleasantly-written article by Mr. A. Lang on "Piccadilly" (the third of a series on "Great Streets of the World"). Many, Mr. Lang thinks, would be inclined to sum up the subject by saying that "Piccadilly is cheerful and is satisfactory." That is a happy way of criticising Piccadilly, but Mr. Lang thinks there is occasionally more to be said for it. There are two seasons when Piccadilly looks its best,—

"One of these is in mid-May, when all the flowering trees are in blossom, when the chestnut hangs out its fragrant tapers in the green shade of its fans, when the hawthorn perfumes even the London air, when the laburnums are "drooping wells of fire" ["*dropping*-wells," Mr. Lang!—so eminent a scholar should at least quote the Laureate correctly], when on all the boughs is the tender green, the first flush of spring. London is very well supplied with trees, and, for a few days early in the season, the town has almost a Chaucerian aspect of prettiness and innocence. That jaded old Piccadilly in her spring dress looks as fresh as a young lady in her first season. . . . . The next best aspect, or perhaps the best aspect of Piccadilly is in the evening in mid-October, when the lingering light flushes the houses, the sunset struggling through the opals of the London smoke, red and azures blending in the distance, while all down through "the gradual dusk veil" of evening the serpentine lines of lamps begin to burn. London, when there is not a fog, has sunsets of peculiar beauty, thanks perhaps to the smoky air; whatever the reason, they are very soft, rich, and strange. Many a time, walking eastward through the early dusk in Piccadilly, I have turned back and stood watching these beautiful effects, which Mr. Marshall, by-the-bye, often renders admirably in watercolours."

The *English Illustrated Magazine* contains an article by the Dean of Gloucester, on Tewkesbury Abbey, mainly historical, but including some good thoughts about the architecture of the building: there are some illustrative sketches by Miss C. Alfreda Channer.

Among the monthly periodicals specially devoted to art, the *Art-Journal* does not touch upon architecture in the August number, but contains the sixth of a series of articles on the Progress of the Industrial Arts, by Mr. Aymer Vallance, the present number dealing with "Velvets, Velveteens, and Plushes," and containing some good illustrations of modern work. The *Antiquary* devotes a short article to the Westminster Abbey Report, supporting the south-eastern chapel scheme as against the refectory one, because the former can be put in connexion with and "carry on" the church and the latter is isolated; also because the latter scheme would cut off the light from Ashburnham House, and the proposed new interior would not be nearly so large in scale or so dignified as Mr. Pearson's sketch appended to the report has induced some people to expect; (which latter remark is not without its point). The *Portfolio* has an article on Guercino, more historical than critical, accompanying a good illustration of his "Angels Weeping over the Dead Christ," and an article by Mr. A. H. Church on "Symmetry in Japanese Ornament," which, the reader may be disposed to think, is rather like the celebrated chapter on owls in Ireland; but Mr. Church wishes to persuade his readers that there is a good deal more symmetry in Japanese design than they are accustomed to think, only symmetry of a peculiarly Japanese type. In regard to this the writer remarks,—

"The apparently casual way in which armorial bearings or other decorative features are powdered over the surface, say, of a lacquer box is, indeed, frequently less casual and irregular than appears at first sight. In very many cases a kind of balance may be recognised, on the further study of such ornamented surfaces; and I have found in several instances that it is possible to draw a straight line, perhaps vertical or horizontal, but more probably diagonal, which shall divide into exact halves the decorated area in such a way that each half shall contain an equal number of the decorative elements present."

The *Magazine of Art* includes an article on "Longleat," with some good illustrations.

Among the July quarterlies the *Quarterly Review* contains a long article, mainly of a historical kind, on "Mediæval Athens," consisting of a review of Gregorovius's "Geschichte der Stadt Athen im Mittellalter." The *Edinburgh Review* contains a long article, which may interest some of our readers, on "London Architecture in the Nineteenth Century," commencing with a sketch of the aspect of the principal streets and neighbourhood of West London in the early part of the century, founded in part on the views in the Crace collection, and then proceeding with a general review of the principal buildings and the general tendency of architecture in London during the progress of the century. We may quote the conclusion of the article, in regard to the improvement in our street architecture:—

The change which has appeared in the more recent streets and squares (or "gardens," the favourite modern term) is truly remarkable. We see cement discarded at last, and the old London material, brick,—durable in substance and warm in colour,—once more adopted, in a manner founded upon the eighteenth century style, but in many cases developing into an architectural picturesqueness and variety to which eighteenth century London architecture was quite a stranger. There is no doubt a certain amount of mere copying of the eighteenth century London house going on, of which one of the most thorough and typical

examples is to be found in the large house built, from the designs of Mr. Norman Shaw, in Queen's-gate, opposite the end of Elvaston-place. This kind of thing is, of course, a mere archæological revival, with which sentiment has more to do than architectural taste. But in a great part of the modern brick house-building of London there is much more than mere archæological sentiment. On the Chelsea Embankment, in Harrington-gardens, Collingham-gardens, and other portions of the Earl's-court neighbourhood, in the still unfinished Kensington-court, in the new houses in the neighbourhood of Cadogan-square and Sloane-street, in Mr. Norman Shaw's charming building at the corner of St. James's-street and Pall Mall, we find at the present moment a brick street architecture growing up which is at once suitable and picturesque, capable of fine effects in combination, and varied in detail, so as to give to each house its own character and individuality. Among the architects whose names are most prominently connected with this revival of the picturesque of city domestic architecture are Mr. Norman Shaw, Mr. Ernest George, and Mr. J. J. Stevenson; while Mr. Collcutt, the architect of the Imperial Institute, has also given us the one picturesque theatre façade of London—that of the English Opera House in Shaftesbury-avenue. Nor are we to forget, in speaking of the modern brick architecture of London, the series of schools erected for the London School Board by Mr. E. R. Robson, their architect during many years; buildings also founded on the old London brick style, but treated with a remarkable degree of picturesque and characteristic variety, and which form an important series of architectural additions to the eastern, northern, and southern quarters of London. It is of course difficult to prophesy how this outgrowth of modern brick architecture may be regarded by our descendants in the next century. It may be argued, perhaps, that this is merely the last new fashion, and that those who live at the close of the twentieth century will look back on it with as much indifference as that with which we now regard the stuccoed fronts of the earlier part of the present century. But we venture to think this is a mistake. *Sunt certi denique fines:* there is something beyond fashion, even in modern architecture; and the architectural historian of the next century, looking back on this *fin de siècle* period, if he records that we were totally wanting in national pride in our public architecture, that we left behind us unwieldy and inconvenient Mediæval law courts and scamped and paltry public offices, will at least be able to add the saving clause—"but they knew how to build street houses."

The author of the article appears to have made a slip of the pen in a footnote referring to the description of the Mausoleum "by Pausanias;" it should be "by Pliny."

The Student's Column.

MARBLES.—VI.

IN the first article of this series we briefly enumerated the different kinds of stone comprised in the term "marble"; and in subsequent remarks dealing with the employment of marbles by the ancients, we had occasion to make use of many technical words, the precise meaning of which we have not hitherto explained. Many of the rocks alluded to the student perhaps heard of for the first time, and it is now our intention to describe them generically, to give some account of their origin and physical and chemical properties; it was not deemed practicable to do this in the historic sketch. And we would distinctly urge upon the student the prime necessity of committing to memory the contents of the next three or four articles. It may not be of much importance to burden the mind with the various Latin and Italian names of either ancient or modern marbles; and it is, perhaps, too much to expect the student to retain the names and descriptions of the innumerable varieties of marble which find their way into our own and other markets, and which will be detailed in due course. He will intuitively grasp the salient features of the more conspicuous kinds in use, and that will be enough for the present. But it is imperatively necessary for him to learn the differences subsisting between the chief classes of stone,—that he shall know a serpentine from a malachite, a crystalline limestone from a quartzite, a breccia from a shell-marble, and so on. It ought not to be difficult for him, after a very little practice, to determine at a glance all these, and many common characteristics, of other kinds of marbles.

The writer knows of no better method in commencing a study of this kind than to consider the stones from a geological aspect, and there seems to be much room for information on this head. Nearly all the modern practical works on marble are singularly devoid of anything like accurate information concerning the actual nature of the materials of which they treat; and this lack of knowledge on the part of the writers is painfully apparent in many parts of the treatises in question. It seems to be recognised that a certain amount of geology must be thrown in in their description of the stones, consequently, either the vivid imagination has been drawn upon to supply this, or snatches from semi-scientific works,—if we may use the term,—are inappropriately distributed. Such cannot, of course, pass muster in the light of scientific criticism. For all that, there is usually a great deal of useful practical information in the works on marble to which we are alluding, and it is very far from our purpose to dissuade the student from consulting them in so far as they may deal with the subject in a commercial sense. In fact, if he desires to know something of marbles for business purposes only, we would rather that he should read them in preference to modern geological text-books, which are written only for students of geology, and do not contain much that is of practical utility to either the architect or engineer. It is true that by a roundabout process, and intense application to its study, the average text-book may be made to yield much that is of use; but most of this would be derived indirectly, and a great deal of unnecessary matter would have to be digested in the process.

First let us say something concerning the origin of the rocks included in our definition of "marbles." We have heard it argued by those who apparently have not paid much attention to the subject, that it is of no practical importance to the architectural student to know anything concerning the origin of either building or ornamental stones. That such an argument does not rest on a very substantial basis is, we think, most conclusively proved. Apart from its educational value, it is of considerable practical importance for him to be enabled to distinguish the difference between rocks which have a superficial resemblance to each other, and in this, in very many instances, he will be most materially assisted if he is able to conjure up their origin in his mind when sitting in judgment upon them. It may not at first sight seem to be of much moment from a practical point of view to ascertain the nature of origin of such a marble as, say, breccia. Yet breccias are of various kinds, and they have not a common origin. One is formed of fragments of many different sorts of rocks of varying hardness, and has a comparatively insecure matrix. In practice such a stone would be found difficult to work, and in many cases would wear very unevenly. The student who had any adequate idea of the nature and origin of the stone could predict this without putting it to the practical test. So, also, he would be better able to discuss the merits of a serpentine breccia in the light of knowledge of its origin. The disposition of either kind in the field from the quarryman's standpoint could only be ascertained by very rough-and-ready means, and after infinite pains, unless the connexion between this and the origin of both materials were recognised. The peculiar differences between the divers varieties of shell-marbles, and especially in regard to their colour, would be frequently understood in a moment if some consideration were given to their origin. Place a dozen widely different kinds of stone on the table; it is desired to select one of these to withstand the action of the weather in a trying position. If the student, on looking at them attentively, can understand their origin, respectively, he will in that connexion know much concerning their weathering qualities, on the principle of cause and effect. Moreover, in the majority of instances, he will, for the same reason, be able to form some idea of their physical and chemical properties.

As many kinds of stone are comprised amongst the marbles, it may safely be inferred that they have originated in several special processes, and this is so. Marbles may be either of aqueous, igneous, or metamorphic origin. We say that a rock is of aqueous origin when it has been laid down, or formed, in water. There are three principal kinds of aqueous rocks:—

1. Those in which the material which forms the rock has been almost entirely or quite laid down as sediment, in the widest application of the term.

2. Where the material has been derived from chemical precipitation in water.

3. Those formed by the successive accumulation of organic remains.

The first kind includes such as sands, sandstones, clays, conglomerates, some breccias, &c., all of which are essentially derivative in character,—*i.e.*, the materials of which they are made have been obtained in the mechanical destruction of pre-existing rocks, and they are, therefore, more or less detrital. Their character depends in a great measure on the nature of the materials so derived, and the manner in which they have been laid down or deposited. The action by which they have been formed is somewhat as follows: A sea cliff is attacked by the denuding agents of the atmosphere (of which more anon), which cause large masses of the cliff to fall on to the shore. These the waves as soon as possible begin to attack, break up, and carry away. The larger pieces of stone refuse to be transported quite as easily as the smaller, so they are knocked together and minute pieces chipped off until they are much reduced in size, and eventually become entirely disintegrated where circumstances are favourable. These minute chips are the sand, which is carried off shore, and a short distance out to sea, until the velocity of the water becomes insufficient to suspend them any longer, and they drop, or are deposited on the sea bottom. The accumulation of these grains in time makes a thick bed of sand, and when other mineral matter is formed, chemically, between the grains, cementing them together, or the whole is subjected to pressure, a sandstone is the result.

Clays are the finely divided matter, usually impure silicate of alumina, carried from the shore and deposited where there is but little motion in the water,—beyond the point at which the sand grains dropped. Pure clay is formed by the chemical disintegration of rocks containing a large percentage of felspar. Unless materially altered in structure, and compacted subsequent to their deposition, they are not hard enough to take a polish.

Near and on the shore, we have the larger fragments and pebbles,—gravel and shingle,—which are frequently bound together by chemical agency, and form the conglomerates or pudding-stones so often admired when polished as marble.

Breccia is a rock composed of angular instead of rounded fragments. In nature it commonly presents less trace of stratification than conglomerate. Intermediate stages between these two rocks, where the stones are partly angular and partly subangular and rounded, are known as brecciated conglomerate. Considered as a detrital deposit formed by superficial waste, breccia points to the disintegration of rocks by the atmosphere, and the accumulation of their fragments with little or no intervention of running water. Thus, it may be produced at the base of a cliff, either subærially or where the débris of the cliff falls at once into a lake or into deep sea water. These are the kinds of breccias alluded to in preceding articles, but there is also another variety formed in a totally different manner by igneous action, to which we shall presently refer.

OBITUARY.

MR. W. H. COWLIN.—The *Bristol Mercury* of the 25th ult. contained a long and appreciative obituary notice of Mr. William Henry Cowlin, a well-known local builder, and until lately President of the National Association of Master Builders. Mr. Cowlin, who was about fifty years of age at the time of his death, had been ill since Christmas last, when he had a paralytic attack. As a lad he studied drawing at the Bristol Fine Arts Academy, and his capacity as a draughtsman stood him in good stead in after years. He carried out many important works in Bristol and the neighbourhood, and, indeed, in many other parts of the United Kingdom.

ALDERMAN T. P. BARKAS, OF NEWCASTLE-ON-TYNE.—This gentleman, well known in the North of England for his attainments as a geologist and man of science, died recently at an advanced age. When a mere youth, he commenced his business career in 1834 as a builder, which he relinquished a few years later for pursuits which were more congenial to his tastes.

MR. V. W. VOISEY.—The death of Mr. V. W. Voisey, F.R.I.B.A., of Bristol, took place at his residence, Swiss Lodge, Durdham Park, on the 31st ult. As a church architect, says the *Bristol Times and Mirror*, he did some high-class work, and in the fine arts he was a man of considerable taste and judgment. His architectural and other sketches of Continental and other cathedrals, &c., dedicated, by permission, to the Bishop of the Diocese, were lately published.

GENERAL BUILDING NEWS.

New Epidemic Hospital, Nottingham.—This hospital, which has been erected by the Corporation of Nottingham, was opened by the Mayor (Mr. S. H. Sands), on July 15. The buildings occupy a site of about twelve acres, and are situated about two and a half miles from the business centre of the town, the Market-place. Like most other local authorities, the Nottingham Corporation found very great difficulty in acquiring a site for their new hospital, and after negotiating with several owners, they eventually bought an estate of about 125 acres of glebe land from the vicar of one of the parishes in the borough. It was found necessary to buy this large area, as if only a smaller area had been bought it was found that the claim set up by the vicar for damage to the adjoining land would be so great that it would pay the Corporation to buy the whole estate. The site is a very favourable one, sloping gently to the south-west, and the strata is of a light sandy nature. At the present time accommodation has been provided for eighty-two patients, but the Administrative Block, Laundry Block, and Stabling have been built sufficiently large to allow for a large increase in the number of beds. The eighty-two beds are contained in four blocks, namely, two Fever Blocks containing twenty-two beds each, one Small-pox Block also containing twenty-two beds, and one Isolation Block containing sixteen beds. The two blocks for fever and the one for small-pox patients are almost identical in plan and construction, and each consist of an entrance hall giving access to a ward kitchen and two large wards, each 60 ft. long, 25 ft. wide, and 13 ft. 6 in. high, and each designed to accommodate ten beds; there is also a small room attached to each large ward containing one bed, which may be used for any patient requiring special attention or isolation. The bath-rooms and water-closets, &c., are contained in annexes divided from the large wards by short passages having through ventilation, and a bath-room, coal-place, foul-linen place, and stores are provided adjoining the entrance to each block. The Isolation Block consists of two wards, each designed to accommodate four patients, and four wards containing two beds each, with the necessary bath-rooms, stores, water-closets, &c. The Small-pox Block is divided from the remainder of the buildings by a fence 6 ft. high, and an annexe has been built in connexion with it, to provide both day and night accommodation for the nurses attending small-pox cases, so that they need not visit the Administrative Block, nor have any intercourse with nurses attending other cases. The blocks are built on an impervious layer of cement concrete, and the walls are faced on the inside with coloured glazed bricks, to a height of 5 ft. above the floor, and above that are plastered in Parian cement. Each of the large wards is warmed by two steam radiators and two of Shorland's "Manchester" grates, and the ventilation has been carefully arranged. Each fireplace and radiator has a fresh air supply direct from the outside, and delivers fresh warm air into the room, and there are fresh-air inlets under each bed. The smoke flues from the ward-kitchen and from the ward fireplaces adjoining the same are of iron, and are carried up in the centre of a ventilating tower 50 ft. high, and have been arranged so that the heat radiated from the smoke flues assists the ventilation. In the ceiling of each ward are outlet gratings, connected with trunks or channels carried above the ceiling, and delivering into the ventilation tower, in which are placed two large Bunsen atmospheric burners to assist the updraught. The wards are lighted by Wenham lamps, and the products of combustion are conducted to the ventilation tower in tubes carried in the centre of ventilation-trunks. The Administrative Block is three stories in height, and contains, on the ground-floor, waiting-room and committee-room, residence for medical officer, dispensary, matron's-rooms and stores, kitchen, outbuildings, and the laundry for officials. Upstairs there are altogether eighteen bedrooms, with bath-rooms and other conveniences. The Laundry Block is situated at the northern end of the site, and contains disinfector, boiler and engine-house, laundry drying-room, and ironing-room. The Stable Block contains, besides stabling for two horses, the carriage-houses for two ambulances, and for vans for infected and disinfected goods. This block contains also the mortuary. At the entrance to the grounds is a lodge for the caretaker, and the grounds are enclosed, where they abut upon the main road, by a wall 7 ft. high, and on the other three sides by iron hurdle fencing. The buildings are plainly built of brickwork, with Hollington stone dressings, and the roofs are all covered with tiles. It should be stated that the Administrative Block is connected with the Fever and other blocks by a corridor, which is lined with a dado of glazed bricks; under this corridor is a brick subway, divided into two chambers; in one are laid the gas and water pipes, and in the other the steam-pipes; the whole of these pipes are thus laid so that access can be had to them without breaking up the ground. The steam-heating is on the low-pressure principle, and the steam required for heating the blocks, and that required for the two laundries and for cooking is provided by a boiler; the steam is conducted from the boiler-house in the subway referred to, and is reduced by reducing-valves to about 7 lbs. pressure before it passes through any of the radiators, or is used for laundry or cooking purposes. The maximum distance to which steam is carried is about 250 yards, but all the steam-pipes are covered with non-conducting composition. The buildings have been designed by, and carried out under the immediate direction of, Mr. Arthur Brown, M.Inst.C.E., Borough Engineer, who has been assisted by Mr. F. B. Lewis, A.R.I.B.A., Assoc. M.Inst.C.E., the Assistant Engineer. Mr. E. Jones has been the clerk of works. The total cost of the buildings, exclusive of land, is about £25,000. The contractors for the buildings were Messrs. Wheatley & Maule, of Nottingham; the laundry apparatus was provided by Messrs. Bradford & Co., of Salford; the cooking apparatus and disinfector by Messrs. Goddard, Massey, & Warner, of Nottingham; the heating apparatus by Mr. W. W. Phipson, of London; the locks and fittings by Messrs. Smith & Son, of Birmingham; the whole of the closets, slop-sinks, and sanitary appliances by Mr. George Jennings, of London; and the buildings have been furnished by Messrs. Foster & Cooper, of Nottingham.

New Buildings for Religious and Social Work in Bermondsey.—On the 14th ult. the Lord Mayor laid the foundation-stone of what is to be known as the "Bermondsey Settlement," situated in Farncombe-street. The present undertaking is part of a scheme which was adopted some two years ago by Wesleyan members of the Universities of Oxford, Cambridge, Edinburgh, and London. It is associated with a number of schools throughout the country, and was approved by the Wesleyan Conference of 1889. The buildings which are to form the settlement will contain a lecture-hall, several class-rooms, a students' library and reading room, a room fitted with apparatus for cookery and dressmaking, a chemical laboratory, a workshop, and a gymnasium, together with a warden's house and a residence for about twenty men, who are to devote a portion of their leisure to carrying on the various enterprises connected with the settlement. The cost of the building, site, &c., will be 13,500*l*. Mr. Elijah Hoole, F.R.I.B.A., is the architect.

Chancel, St. Paul's Episcopal Church, Edinburgh.—On the 11th ult. the foundation-stone of the new chancel of St. Paul's Episcopal Church, York-place, Edinburgh, was laid. Starting from the old chancel piers, the new chancel will be 47 ft. in length, and of the same breadth as the existing nave. On the south of the chancel there will be a vestry for clergy, and below it a choir vestry. The organ will be placed in a chamber constructed for it, opening to the chancel with an arch and piers of the same span as those of the nave. The present east window is to be moved to the new position of the east wall, the flanking turrets being rebuilt and the window shortened, so as to give greater height for the altar and reredos. In addition to the east window there will be three long windows in the side walls of the chancel. The alterations are being carried out in the existing style of Late Gothic, and are to cost, roughly speaking, 3,000*l*. Messrs. Kinnear & Peddie, of Edinburgh, are the architects.

Opening of Public Baths, Gloucester.—The Gloucester public baths, which have been erected at a cost of 10,000*l*., were formally opened on the 30th ult. The building is situate in Barton-street, and comprises two swimming baths, 100 ft. long by 46 ft. wide; two sets of private baths, and Turkish and vapour baths fitted up with all the latest appliances. The architect is Mr. J. Fletcher Trew, and the builders, Messrs. D. C. Jones & Co., both of Gloucester.

A New Roman Catholic Church for Clones (Ireland).—A new Catholic Church has been commenced at Clones. Mr. Hague, of Dublin, is the architect, and Mr. P. Nolan, of Monaghan, is the builder.

School Buildings, Leith.—The foundation-stone of a new public school, in course of construction at Craighall-road, Leith, was laid by Mr. Robert Somerville, chairman of the Leith School Board, on the 11th ult. The new school is being erected from plans prepared by Mr. George Craig, architect, Leith. Situated at the corner of Craighall-road, and a new street being formed there, the building is 121 ft. long by 72 ft. deep; and the four floors, into which the school is divided, will give accommodation for 1,601 pupils. On account of the low-level of the site, a basement floor has been constructed, and occupied with halls, cloak-rooms, lavatories, and covered playgrounds, the upper floors being reached by broad staircases placed at each end of the building, while on each floor a corridor is to extend along the centre of the whole length of the school. On either side of these corridors the class-rooms, twenty-three in number, cookery, music, and sewing rooms will branch off, each class-room having accommodation for sixty pupils. Several of the rooms are to be divided by movable glass screens. The principal façade will be divided into three wings, the side wings to be ornamented with pilasters, while the centre will be specially treated. On the ground-floor the porch projects about 9 ft., and is formed of an arcade of columns supporting moulded arches, cornices, and a stone balustrade. This wing is to be ornamented with pilasters and cornices, with an arched window having a pediment, on the top of which a figure of a youth bearing a torch is to be placed. The building will be heated on the low-pressure system. The total cost of the school is estimated at about 18,000*l*. Messrs. A. & W. Fingzies, of Leith, are the builders.

Jam Factory, Maidstone.—On the 27th ult. some fruit-preserving premises, which have been erected at Lock Meadows, were formally opened. The premises stand on an area of two acres of level ground, and consist of picking, boiling, packing, cooking, and machine room, with a boiler-house, coal-stores, &c. These rooms cover a space of about 9,000 superficial ft., and the warehouse, which is about 220 ft. long by 60 ft. wide, contains about 13,000 superficial ft. The shaft when completed will be 75 ft. in height. The boiler is 26 ft. by 6 ft., and the engine is tested to 12 horse-power. The whole of the factory is lighted by electric light. There will be a wharf frontage of 175 ft. and also a siding on to the South-Eastern Railway. The building has been constructed by Mr. Candler, of Maidstone, from the designs of Messrs. Ruck & Smith, architects, of Maidstone.

Free Church, Lamlash, N.B.—On the 24th ult. the foundation stone of the new Free Church, Lamlash, was laid by Mr. Gilbert Beith. Mr. James Hamilton, of Glasgow, was the architect. It is expected that the edifice will cost about 2,000*l*., and that it will accommodate about 500.

New Church at Southwick, Kirkcudbrightshire.—A new church has just been erected at Southwick, Kirkcudbrightshire. The building occupies a site in a meadow called Denny Bush. The building is of Norman design, having a long nave, with transepts and apse, and a heavy tower rising 70 ft. high. It is built of local granite, with red sandstone facings from Gatelawbridge. The church will accommodate over 200 persons. The building has cost over 2,000*l*. The architects were Messrs. Kinnear & Peddie, Edinburgh.

SANITARY AND ENGINEERING NEWS.

Uttoxeter Waterworks.—A ratepayers' meeting was recently held at Uttoxeter to hear Mr. W. H. Radford, C.E. explain a scheme for new waterworks in the town. The present waterworks are almost useless, through lack of pressure and faulty design, and it is proposed to construct a new service reservoir with water-mains throughout the town, and to take powers to acquire additional springs at Somershall Herbert, three-and-a-half miles from the town. The cost of the engineering works would be 5,450*l*. An act of Parliament will be required. A resolution, approving Mr. Radford's scheme, was passed unanimously.

Audley Waterworks.—On the 8th ult. the new waterworks which have just been completed at Audley, Staffordshire, were formally opened by Mrs. Rigby, wife of the Chairman of the Audley Local Board of Health. The parish, which contains a population of about 16,000 persons, consists of a number of villages scattered over the mining district of North Staffordshire. It was found necessary to obtain the water from the sandstone formation below the level of the deepest mines in the immediate neighbourhood, in order to secure a constant and pure supply. In consequence of the scarcity of water, the Local Board some years ago adopted a partial scheme by which one part of the district was supplied; this has now been extended, and the new system just completed provides for a daily supply of 260,000 gallons. The works were planned by Messrs. Ford & Slater, architects, of Burslem, and the machinery was designed and constructed at Union Foundry, Kidsgrove, Staffordshire, now one of the branches of Messrs. Woodhouse & Rawson United, Limited, of 88, Queen Victoria-street, London, under the supervision of Mr. C. E. Masterman, Assoc. M. Inst. C.E., the Works Manager. The pumping machinery is capable of delivering 20,000 gallons per hour into the high-service reservoir, through 3 miles of leading mains, from a depth of 530 ft. The pump-well is 100 ft. deep, and is lined throughout with cast-iron tubbing in bracketted segmental rings, each 5 ft. deep, and averaging five-eights of an inch thick. This tubbing is belled out to a diameter of 7 ft. at the top. There is a borehole 100 ft. deep at the bottom of the well. The pump, which is of peculiar construction, is driven direct from the triple-throw crank shaft by three long wrought-iron pump-rods attached to the bucket and crosshead. It consists of two buckets working in one gun-metal-lined barrel, the lower bucket being actuated by the centre pump-rod of wrought-iron which passes through the upper bucket, and through a hollow sleeve. This sleeve is screwed into the upper bucket, and also to the underside of the crosshead to which the two outer wrought-iron pump-rods are attached, thus enabling the upper bucket to work in a contrary direction to the lower one, and giving a continuous flow of water through the working barrel. The valves of the buckets are so constructed as to partly rotate at each lift. The water delivered from the pump is forced through one of Masterman's patent diaphragm condensers, fixed below the floor, fitted with "Credenda" steel tubes, and having a cooling surface of 390 square feet. Immediately outside the engine-house is a cast-iron air

vessel, also a retaining-valve, and a relief-valve, the latter weighted to release at a pressure of 300 lbs. per square inch. A "by-pass" is arranged from the pump to the air-vessel by which the water can be carried past the condenser if it is desired to work the engine at high-pressure. The mains, which are of cast-iron, are of the spigot and socket type, and range in diameter from 8 in. downwards. They are about thirteen miles in length, and are provided with suitable valves and fire-connexions. The engines are of the compound-coupled type, fitted with the above-described condenser, and are of 110 indicated h.-p., when working at their normal speed of 75 revolutions, with a boiler-pressure of 70 lb. The high-pressure cylinder is 12 in. bore, and the low-pressure cylinder 22 in., each having a stroke of 2 ft. They are steam-jacketted, lagged with mahogany, and bound with brass bands. An "Acme" governor fixed on the steam-chest regulates the steam supply. Slipper-guides are attached to the ends of the piston-rods, and the connecting-rod and shaft-bearings are of gun-metal of ample size. The eccentric-rods are constructed of steel tubes, and the shaft is of best hammered iron; while the three-throw crank shaft is driven by a mortice-wheel, which takes motion from a pinion geared in the ratio of 3 to 1. Steam is generated in two Cornish boilers, each 6 ft. diameter by 24 ft. long, made of Staffordshire plates, and tested by hydraulic pressure to 120 lb. per square inch. These are fed by a "Cameron" donkey-pump placed in the engine-house, and drawing water from a wrought-iron hotwell outside the house. In addition to this, there are auxiliary pipes attached to the boiler-feed to prevent any possible interruption to the supply of feed water. An arrangement in the roof of the engine-house facilitates the drawing-out of the pump-rods when the buckets require changing, and a travelling crane is fixed over the engine, in order that any part of the machinery may be easily moved.

The Sewerage of Glusburn.—At the monthly meeting of the Skipton Rural Sanitary Authority on the 1st. inst., Mr. Preston, C.E., of Bradford, laid before the meeting plans for a complete sewerage scheme for the township of Glusburn. Originally a sectional scheme had been proposed, but it was afterwards decided to have a complete scheme, which would cost about 6,000*l.*, but the cost could be reduced by modification to 5,000*l.* It was decided to go on with the preliminaries for the necessary easements and the purchase of land.

Engineering Appointment.—Mr. Wignall, Chief Engineering Assistant to Mr. T. de Courcy Meade (Engineer to the Hornsey Local Board), has been appointed Assistant City Engineer to the Municipality of Cape Town.

Drainage Scheme, Soothill Nether, Yorkshire.—The Local Board of Soothill Nether, near Dewsbury, have accepted tenders for the execution of the scheme of drainage designed by Mr. Malcolm Paterson, M.Inst.C.E., Bradford, amounting to the sum of 10,100*l.* The district is a manufacturing one, with a heavy discharge of trade refuse of a noxious kind from woollen factories. At present there are practically no drains except rubble surface-channels, designed for top water, and the scheme consists of (1) about 12,000 yards of brick and pipe sewers, gathered into two outfalls to a single point by gravitation, of which nearly one-half will be laid through private lands, under difficult circumstances, and (2) works for the treatment of both domestic and trade refuse. The system will be lime precipitation in tanks, and deep filtration through four acres of alluvial silt well adapted for the purpose. The lime-mixing machinery is designed to be entirely automatic, including the propulsion of the lime-powder, the agitation of the milk of lime, and the blending with the sewage, the whole being worked by sewage power.

Waterworks Scheme, Glasshoughton.—At a meeting of the Pontefract Rural Sanitary Authority, held on the 1st inst., tenders for the execution of the waterworks scheme, designed by Mr. Malcolm Paterson, M.Inst. C.E., of Bradford, were opened, and that of Mr. J. R. Maw, of Hull, accepted. The total cost of the scheme will be about 1,200*l.* At the same meeting the Engineer was authorised to appoint a Clerk of Works.

STAINED GLASS AND DECORATION.

Stained Glass Windows, Wyke Church, Bradford. — Several stained-glass windows have just been placed in this church. The subjects represented are the "Nativity and Baptism of our Lord," "Blessing little Children," figures of our Lord in Glory, Moses, and David. Messrs. Warrington & Co., of London, were the artists employed.

Memorial Window, St. Anne's Church, Strathpeffer.—The commission for the execution of the stained-glass east window in St. Anne's Church, Strathpeffer, to the memory of the late Duchess of Sutherland, has been entrusted to Messrs. Powell Brothers, of Leeds, whose design was selected in competition with other art firms.

Memorial Window, Market Weighton Church.—A memorial window, to the late Drs. Matthew and Alfred Jackson, has just been placed in the South aisle of Market Weighton church, by members of their family and several other friends. The subject of the window is "Christ healing the Sick," and the work is from the studio of Messrs. Powell Bros., of Leeds.

Stained Glass Window, St. Matthias Church, Plymouth.—A new stained-glass window has been added to the Church of St. Matthias, Plymouth. The subject of the window is "The Resurrection." In the centre light appears our Lord arisen from the tomb, and on either side are bending angels veiling their faces. Below are two Roman soldiers. Above the three main lights the tracery is filled principally with emblematic foliage, but at the apex the dove is represented, and on either side a small figure, kept very light, one representing an angel with a scroll. The head of the other is a portrait of the late Edgar Mason Willoughby, to whose memory this window has been placed by his father, Mr. Joseph Willoughby, of Plymouth. The window was designed and placed by Messrs. Heaton, Butler, & Bayne, of London.

FOREIGN AND COLONIAL.

Public Works in the Transvaal.—The *Cape Times* of June 24 published a summary of the annual report of the Transvaal Government Engineer and Architect, and says that the report deals with public buildings, bridges, roads, and special works. Starting with the buildings, the State Engineer and Architect gives an elaborate description of the new Government buildings, which bristles with words drawn from the French terminology, like *avant corps*, *rez de chaussée*, *Renaissance*, and *silhouette*. The details are rambling, and give no comprehensive idea of the "stately pile." We are told, however, that the building will be completed by December 31 of this year. The Volks hospital and a lunatic asylum at Pretoria were nearly complete; the leper asylum had also been constructed during the past year. During last year a barracks was built for the Johannesburg foot police; the Court of the Special Landdrost was enlarged, and the clock tower reconstructed. The plans for a new gaol at Johannesburg are complete, as also those for a large State prison at Pretoria. Powder magazines were built at Pietersburg, Lydenburg, Nylstroom, Volksrust, Wakkerstroom, and Piet Retief. The chapter ends with the remark that some of the plans are provisionally postponed on account of the financial condition of the country. The second chapter, on bridges, is rendered interesting from the various allusions to the floods of last year. During 1890, bridges were in construction at Standerton, over the Vaal; over Blesbokspruit, at Heidelberg; over Mooiriver, at Potchefstroom; over the Schoonspruit, at Klerksdorp, and over the Six Mile Spruit and over the Crocodile, between Pretoria and Rustenburg. This is followed by a long string of complaints about the cost of the importation of Portland cement, the difficulty of obtaining suitable stone, and the lack of good workmen. About the Six Mile Spruit bridge we are told that "when the abutments were half-way it was deemed advisable to add another span of 40 ft., making the bridge consist of two spans of 40 ft. each. Tenders were called, but were too high, wherefore, with a view to economy, it was resolved to revert to the original plan of one span of 40 ft., which was completed on September 13. Subsequently, it appeared that the second span was an absolute necessity, for the floods of September, 1890, brought the abutments to grief. First the northern one became undermined, and fell into the river; this narrowed the passage, and the southern spans subsequently similarly fell. The remaining five bridges sustained no damage whatever from the floods. Two bridges over the Olifants and Wilge rivers, between Pretoria and Middelburg, are in construction. The Appies River bridge, at Pretoria, has been repeatedly damaged by floods. The bridges were not built according to his plans. They were built with such short spans on account of the economy of the Government. The ironwork of nine bridges was ordered at first from an English firm, but, they not complying with the specifications, the contract was placed with a German firm, whereby 10,000*l.* was saved to the Government.

MISCELLANEOUS.

Incorporated Association of Municipal and County Engineers. — The following gentlemen have been recently elected Members of the Incorporated Association of Municipal and County Engineers:—County Surveyors (England): F. Whitmore, West Suffolk; G. J. Moore, I. of Ely; J. Willmott, Warwickshire; (Ireland): J. H. Brett, co. Antrim; R. A. Gray, co. Dublin; N. Jackson, co. Cork, West Riding; P. J. Lynam, co. Louth; W. P. Orchard, co. Mayo; R. N. Somerville, co. Cavan. Borough Surveyors and Surveyors to Local Boards: J. Baker (Slough), W. H. Brettell (Rowley Regis), J. Carline (Lewisham), J. S. Coverley (Penmaenmawr), O. E. Harrison (Worksop), J. L. Hodge (East Stonehouse), G. Hollings (Wallsend), W. H. Jukes (Tipton), H. J. Kilford (Ilkeston), W. A. Mason (Shildon), J. Mortimer (Braintree), J. Rush (Eye), W. H. Simpson (Blaby, R.S.A.), E. A. Stickland (Newbury), E. A. York (Tettenhall), W. McBishop (Sutton in Ashfield). Graduates:—H. Hurd (Leyton), B. Ball (Middleton), J. R. Dixon (Carlisle), A. R. Finch (Kensington), Hy. Yarwood (Rochdale).

The English Iron Trade.—The depression in the English iron market still continues, and few redeeming features are to be noted. Scotch warrants, though quiet, are still scarce. The chief event of the Glasgow market has been a fall of 1s. 4½d. per ton in hematite warrants. No. 3 Middlesbro' pig is still scarce in makers' hands, and quotations are a shade higher. Hematite pig in the north-west is dull, and makers have made a further reduction of 1s. on mixed numbers of Bessemer iron. Manufactured iron shows a slightly-improved tendency, and prices are steadier. Tinplates are quiet. The steel trade remains dull, and quotations are somewhat easier. The trade in old materials is only of moderate extent. Shipbuilding is very restricted; but engineers continue in fair employment. There is only a slow demand for coals.—*Iron.*

Central Electric Station in Copenhagen.—The new great central electric station now being built for the municipality at Copenhagen will furnish light within a radius of one kilomètre. At first it is only calculated for 15,000 glow-lamps of 16 English candle-power, but with eventual extension to 30,000 lamps. There are to be three steam-engines of 330, 350, and 550 horse-power, with space for two more of 1,000 horse-power,—working two dynamos. There will, in addition, be an accumulation installation (Tudor's patent) for 1,000 lamps. The municipality will carry out all the building work, but Messrs. Siemens & Halske, of Berlin, will furnish the electrical plant. The whole establishment will be in working order by December 15 next.

Building By-laws in Bombay.—The Bombay Corporation recently met to discuss the building by-laws, with a view to preventing in future jerry-building which has had such fatal results within the last few years. Mr. Gostling, the architect who had given scientific evidence in the recent cases of collapse, attended to advise the corporation. One draft by-law provided for the use of good bricks and stone, good mortar, good lime, clean, sharp sand, good cement. Mr. Gostling thought the adjectives in each case unnecessary, as the materials mentioned, to be worthy of the name at all, must be good. Dr. Viegas moved the omission of these words, and by a majority it was carried. Colonel Mereweather, R.E., then proposed that since they gave builders, by this resolution, permission to use whatever kind of material they chose, the draft by-laws now before the Corporation be abandoned. Colonel Wilson left the meeting by way of protest, and a further resolution to omit the word "good," as applied to foundations, was carried. Further discussion was postponed.—*Indian Engineer.*

Lord Hardwicke's Estates. — The sale by auction of the Wimpole estates, as vested in trustees under a private Act of 1881, was not effected on Wednesday afternoon. In the first place, the entire property (11,110 acres) was put up as a whole, but withdrawn when 285,000*l.* had been bid, the vendors bidding 290,000*l.* Then the house and grounds, &c., being 7,000 acres, with an estimated rental of nearly 6,500*l.*, were put up as lot No. 1, but withdrawn at a bid of 175,000*l.*, the vendors' price being 10,000*l.* in advance. So, as previously announced, the sale of the twenty-four remaining lots was not proceeded with.

Lighthouses in the Madras Presidency.—The question of improving the lighthouse buildings and using a better description of apparatus seems to be engaging the attention of the Madras Government just now. That Government have deemed it desirable to offer to any young Engineer officer of a mechanical turn some inducement to make a study of lighthouse buildings and apparatus in use in England and France during his absence on furlough in England, and the Chief Engineer, P.W.D., was asked to nominate an officer. Mr. F. W. Ashpitel, Assistant Engineer, now on furlough in England, having expressed his willingness to undertake such study, the Chief Engineer recommended that officer, and the Government have approved of the selection. The Secretary of State for India has now been written to on the subject, and should his Lordship approve of the proposal, he has been requested to make the necessary arrangements to allow of Mr. Ashpitel inspecting such English lighthouses as may be considered important, and for his being instructed in the working of the apparatus in use in them, and also that the facilities requisite for the inspection of important lighthouses and apparatus on the French coast may be afforded him. Mr. Ashpitel will be allowed his travelling allowances and a bonus of Rs. 1,000 on his return to India, if the reports submitted by him should be considered satisfactory. Mr. Ashpitel is on nineteen months' furlough, which will expire about the end of 1892.—*Indian Engineering.*

Removal.—We are asked to state that owing to alterations to the premises, 59 and 60, Cornhill, E.C., Mr. H. Riches, architect and surveyor, has removed his offices to No. 3, Crooked-lane, King William-street, E.C.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised	Premium.	Designs to be delivered.
*Alterations, Plait Hall	Corporation of Luton	15*l.*, 10*l.*, 5*l.*	Sept. 8
*Port Talbot Technical, &c. Schools	Building Committee..	Not stated	Sept. 10
*Designs for Bridge	Government of New South Wales	700*l.*, 300*l.*, 200*l.*	Jan. 4/92

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Emptying Cesspools	Borough of Richmond, Surrey	*Official*	Aug. 10
*Goods and Coal Depôt, &c.	L. & N.W. Ry.	do.	Aug. 11
Hoist, Shafting, Elevator, &c. Earl-street, Cleator Moor	Co-op. Soc. Lim.	.....	do.
Residence, Fochabers, N. B.	.....	Jas. Smart	do.
Pair Labourers' Cottages and other Buildings, Trehingsta Farm, Stokeclimsland	G. Herriot	S. Hooper	do.
Main Sewerage Works	Burnley Corporation	F. S. Button	do.
Additions to Hospital, Sherburn, Durham	.....	C. Hodgson Fowler	do.
Boiler House and Willey Place, Dewsbury Mills	.....	C. H. Marriott	do.
School, Pickering Nook, near Burnopfield Durham	Tanfield Sch. Bd.	J. Wm. Rounthwaite	do.
*Battery and Drill Shed, Brightlingsea	Admiralty	*Official*	do.
Additions to Church, Burghead, N.B.	.....	Wm. Mackintosh	Aug. 12
Sewering and Street Work	Northwich Loc. Bd.	*Official*	do.
*Broken Granite and Kentish Flints	Barking Town L. B.	C. J. Dawson	Aug. 13
Residence, Workhouse, Barton Regis, Eastville	Union Guardians	F. W. Wills	do.
*Completion of New Hospital	Norwich Corporation	P. P. Marshall	do.
*Supply of Kerbing	Horsham Loc. Bd.	*Official*	do.
Sewer, Stonehouse Lane	Plymouth Corp.	G. D. Bellamy	do.
Sewerage Works	Pudsey Loc Bd.	*Official*	Aug. 14
Laying and Jointing Water-pipes, &c.	Nantwich, U.R.S.A.	J. A. Davenport	do.
*Paving with Wood part of Boro' High-st.	St. Saviour's B. of W.	*Official*	do.
*Painting Works, Netley Hospital	War Department	do.	do.
School, Class-rooms, &c. Blackhill (Benfieldside), Durham	Rev. J. Elliott	Jos. Shields	Aug. 15
Church, Fleur de Lis, Bedwellty, Mon.	Trs. of Gelligaer Lecturership Endowment	Cooke & Hearsey	do.
Evaporating Furnaces, &c. Shotley Bridge	J. Annandale & Sons	.....	do.
Four Houses and Appurtenances, Lower Black, Wainstalls, Halifax	.....	T. L. Patchett	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Boiler House, Chimney Shaft, &c.	Met. Asylums Board	A. & C. Harston	Aug. 15
Making-up Roads, Brentwood	Billericay, U.B.S.A.	*Official*	do.
Hotel, Mill Parade, Newport, Mon.	C. Griffiths	E. A. Lansdowne	Aug. 17
Twenty-one Houses, Brighouse, Halifax	Industrial Society	J. F. Walsh	do.
New Church, Barnard Town, Newport, Mon.	.....	W. Graham, Son, & Hitchcox	do.
*Constructing Road and Sewer	Not stated	H. A. Alexander	do.
*Alterations, Birmingham County Court	H. M. Works	*Official*	do.
Twenty Brick Cottages	New Tredegar Land &c. Company	do.	do.
*Service Reservoir	Sutton-in-Ashfield L.B.	G. Hodson	do
Rebuilding "Green Dragon" Inn Axminster	.....	Ed. Vining	do.
Sewerage Works	Newport (I.W.) Corp.	Baldwin Latham	do.
*Police Station, &c.	Bucks C. C.	*Official*	Aug. 18
Exhauster House, Gasworks	Leeds Corporation	do.	Aug. 19
Villa, Bellevue Road, Banff, N.B.	J. Rankin	Geo. Sutherland	do.
New Chancel, South Aisle, &c. St Catherine's Church, Canton, Cardiff	Committee	Kempson & Fowler	Aug. 20
Mess Room, Baths, &c. at Gasworks, Darlington	Darlington Corp.	*Official*	do.
*Sewerage Works	Hanwell Loc. Bd.	do.	Aug. 24
Town Hall, Municipal Offices, &c.	Morley Corporation	Holtom & Fox	Aug. 26
*Sewerage Works	Dorking Union	W. Rapley, Jr.	Aug. 27
*Four Houses, &c. at Galloway	Admiralty	*Official*	Aug. 28
Railway, No. 4	Glasg. & S.W. Ry. Co.	do.	Aug. 31
*Sewerage Works	Sutton (Surrey) L. B.	J. Anstie	Sept. 7
*Farmhouse and Buildings	Berkeley Castle Estate	.....	No date
School, Conway-road, Cardiff	.....	Habershon & Fawckner	do.
Flagging, Channelling, &c. Silloth Streets	Holme Cultram L. B.	J. Graham	do.
Wrought-iron Fencing, &c.	Nantwich Union Gdn.	*Official*	do.
*Purchase and Removal of Granite Pitching	St. Saviour's B. of W.	do.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary	Applications to be in
Engineer and Surveyor	Rathmines & Rathgar Improvement Comm.	400*l.*	Aug. 11
*Clerk of Works	City of Rochester	3*l.* 3*s.*	Aug. 15
*Junior Examiner	Civil Service Com.	.....	Sept. 3

Those marked with an Asterisk (*) are advertised in this Number. *Competitions*, p. iv. *Contracts*, pp. iv., vi., *and* viii. *Public Appointments*, p. xviii.

Archæological Discovery in Irvine, N.B.—During the course of laying a new water-pipe in Eglinton-street, Irvine, on the 29th ult., one of the old evidences of burghal authority was laid bare,—namely, the foundation of the ancient North Port. Tradition pointed to the site as being near to Seagate, where an historical castle is situated. This has now been confirmed by the finding of the foundations of the pillars and wall near that spot. The course of the Tailors' Strand, one of the old incorporated crafts, was also cut through about 25 ft. outside the port. The port of the Royal burgh was a place of much resort in ancient times. It was there that the Customs were collected, and there the burghers nightly, in detachments, mounted guard in performing the duties of watching and warding. There was no exit from the burgh except through either the Townhead or Townend ports, or across the Irvine Bridge, which was also guarded. After the Rebellion in 1745 these gates came to be considered as obstructions to the thoroughfares, and, on September 3, 1756, the Council ordained that they should be removed.—*Scotsman.*

LEGAL.

CASE UNDER THE EMPLOYERS' LIABILITY ACT:

SMITH *v.* GREENWOOD.

In the City of London Court, on the 31st ult., before Mr. Commissioner Kerr, the case of Smith *v.* Greenwood was heard under the Employers' Liability Act. The plaintiff, Joseph Smith, bricklayer, 72, Minerva-street, Hackney-road, sought to recover 150*l.* damages for injuries sustained through the alleged negligence of the servants of the defendant, Mr. John Greenwood, builder and contractor, 10, Arthur-street West, E.C.

Mr. H. T. Waddy was counsel for the plaintiff and Mr. Henry Kisch for the defendant.

According to the plaintiff's case the defendant was carrying out some extensive structural alterations at Messrs. Hitchcock, Williams, & Co.'s premises in London House Yard, Paternoster-row. Additional premises had been taken, and an entrance effected from the old premises. To do this a hole had to be cut in the party wall 9 ft. high. It became necessary to put in large iron girders, and instructions were given by a man named Saunders, who was the foreman bricklayer, in the employment of the defendant, that a scaffold should be erected by two men, Allen and Murphy, who were to put the girders into a proper position. Smith was called upon by Saunders to assist in putting the girders in position, and the only way in which it could be done was by utilising the scaffold. While the plaintiff was standing on the scaffold it gave way, and he fell to the ground, some distance below, sustaining a double fracture of the arm and other injuries. The accident happened owing to the unsuitability of the scaffold for the purpose for which it was intended. The plaintiff had done no work since the accident.

Mr. Kisch submitted that there was no case, as the scaffold was erected by Allen, who was only in common employment, and for whose acts the defendant was not responsible.

Mr. Commissioner Kerr said the question was whether Saunders, the foreman, was justified in assuming that the scaffold was done right without going to look at it himself.

Mr. Kisch said Saunders' duty was only to give orders, and not to see that the ways, works, machinery, and plant (in the words of the Act) were in a proper condition. The plaintiff must take all reasonable precautions.

Mr. Commissioner Kerr was inclined to think so. It was in consequence of the insufficient performance by Allen of the duty imposed upon him by Saunders that the accident happened. Allen was in common employment. His only difficulty was whether Saunders's duty was completely performed when he said "Put this right; it is not safe." If Allen had put it right no accident would have happened. He questioned whether the duty of a foreman having superintendence was completed when he gave his orders to men in common employment, or whether there was not some fresh obligation, in the nature of a duty, upon him to see that his orders were carried out. It was utterly impossible for a foreman to see that all his orders were carried out. He must entrust somebody with the performance of his orders. On the other hand, the Courts had interpreted the Act very stringently, and they had held that wherever there was a duty it should be performed. He would nonsuit the plaintiff, feeling, under the circumstances, there was no negligence established against any person having superintendence. If the plaintiff appealed, and the Court above thought he was wrong, judgment would be entered for the plaintiff. He assessed the damages at 100*l.* if the plaintiff was ultimately successful.

A nonsuit was accordingly entered, with costs.

CAPITAL AND LABOUR.

The Lock-out of Carpenters and Joiners.—A delegate meeting of carpenters and joiners was held on the 30th ult. at the Old Friends' Hall, St. Martin's-lane. The meeting was the outcome of that held on the 28th ult., when the further consideration of a resolution, submitted by the Executive, declining the terms offered by the Master Builders' Association, but expressing willingness to submit the matter to arbitration, was deferred, in order to allow the delegates time to consult the general body of the men on the following three points:—(1) Whether the members of the trade were in favour of arbitration; (2) striking more firms; or (3) declaring a general strike of the trade throughout the London district. The voting resulted in favour of thirty more firms being struck. The thirty firms were struck against on Saturday last, the 1st inst.

Strike in the Building Trade at Lincoln.—On Saturday morning, the 1st inst., the joiners employed by the Lincoln builders went out on strike for an advance of 1d. per hour in their wages. The present rate is 6¾d., and in May last the men gave notice that unless an advance to 7¾d. was made, to take effect on and after August 1, they should strike work. Since that time a very largely-attended meeting of the master builders has been held to consider the situation, and they came to the unanimous decision that the only advance they could offer was ¼d. per hour, making the rate 7d., and this proposal was communicated to the men, but they refused to accept it, and one of their representatives intimated that they should hold out for the rate they had demanded. On the 31st ult., a meeting of the Master Builders' Association was held, and a resolution was carried not to go beyond the offer already made.

MEETINGS.

Monday, August 10.

Architectural Association.—Annual Excursion, Shrewsbury.

International Congress of Hygiene and Demography.—Meeting in London.

Clerks of Works' Association (Carpenters' Hall).—Paper by Mr. W. Baker. 8 p.m.

Tuesday, August 11.

Architectural Association.—Annual Excursion, Shrewsbury (continued).

International Congress of Hygiene and Demography.—Meeting in London (continued).

Royal Archæological Institute.—Annual Meeting, Edinburgh.

Royal Society of Antiquaries of Ireland.—Meeting at Killarney.

Wednesday, August 12.

Architectural Association.—Annual Excursion, Shrewsbury (continued).

International Congress of Hygiene and Demography.—Meeting in London (continued).

Royal Archæological Institute.—Annual Meeting, Edinburgh (continued).

Thursday, August 13.

Architectural Association.—Annual Excursion, Shrewsbury (continued).

International Congress of Hygiene and Demography.—Meeting in London (continued).

Royal Archæological Institute.—Annual Meeting, Edinburgh (continued).

Friday, August 14.

Architectural Association.—Annual Excursion, Shrewsbury (continued).

International Congress of Hygiene and Demography.—Meeting in London (continued).

Royal Archæological Institute.—Annual Meeting, Edinburgh (continued).

Saturday, August 15.

Architectural Association.—Annual Excursion, Shrewsbury (concluded).

International Congress of Hygiene and Demography.—Meeting in London (continued).

Royal Archæological Institute.—Annual Meeting, Edinburgh (continued).

Glasgow Architectural Association.—Visit to Dunblane Cathedral.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

11,313.—WINDOW SASH-FASTENER: *J. P. Bayly.*—According to this invention, a metal casing is let into the window framework flush with the bottom of the slots in which the sash moves. At the side of one of these slots two levers project, which are connected with two rods extending horizontally from one slot to the other and are bent suitably at right angles, their ends again being bent so as to form bolts projecting upwards into the slots and into suitable bolt holes made in the edge of the window-frame. Springs are coiled round the rods to keep the bolts in the upward position, when one of the projecting knobs is pushed in by the finger the rod is rotated, its other end, forming the bolt, is likewise drawn into the casing and beneath the surface of the slot in which the sash works, the sash then being free to be opened.

13,105.—DECORATIVE ARTIFIAL STONE: *A. McLean.*—On the face of the packing for ordinary concrete slabs and cements chips of marble and pieces of metal are laid. The concrete mass is subjected to pressure, and, when set, the face is rubbed down, producing a decorative effect.

13,625.—FIREPROOF BUILDING: *J. S. Braidwood and another.*—According to this invention, doors, shutters, &c., are made of sheet steel or metal shapes, hollow and packed with alum and sawdust, and all parts where this construction is inadmissible are coated with asbestos paint.

14,126.—PIPE CONNEXIONS: *A. Eadie and J. Tannahill.*—According to this patent, one tube end at a joint is made with an enlargement concave, or largest at its extreme edge. The other tube end is formed with a convex spherical spigot adapted to enter the faucet of the other tube end. Flange rings and packing complete the fastening.

14,657.—GLAZING: *L. McQueen.*—By means of this invention, the astragals allow a solid bed for the glass, and the panes rest on strips of lead cut a little in excess of the length of the glass to allow for overlapping.

8,959.—WINDOW SASH-FASTENERS: *J. Dunbar and J. Nichols.*—According to this invention, the sashes are locked by a small spring bolt and double-locked by turning the bolt until a pin upon it engages in a slot in the catch.

NEW APPLICATIONS FOR PATENTS.

July 21.—12,329, G. Wood, Operating the Ventilating Ridges of Greenhouses, &c.—12,379, P. Schaeffer and L. Landauer, Sash-fasteners.—12,387, C. Griffiths, Ventilators.

July 22.—12,426, A. Green, Appliances for the Simultaneous Opening or Shutting of Doors, &c.—12,429, T. Reynolds and J. Brown, Building Cements.—12,444, R. Rosoman, Ventilator.—12,461, G. Samson, Window-fastener.

July 23.—12,480, J. Martin, Pigments or Paints.—12,519, H. Thornton, Disinfectants for Water-closets, &c.

July 24.—12,571, J. Slack, Enamelled Steel Finger-Plates.—12,582, L. Mannings, Self-locking Sash-fastener.—12,583, W. Baker and others, Ventilating Gear for Greenhouses, &c.—12,591, S. Collins and others, Window-sash Holding and Balancing Devices.—12,633, T. Harries, Artificial Stone.—12,651, W. Reynor, Preventing Waste of Water in Flushing Water-closets, &c.—12,664, C. Smith, White Decorative Stucco or Parqueting.

PROVISIONAL SPECIFICATIONS ACCEPTED.

8,589, J. Richardson, Hinges.—10,045, S. Wilde, Clip to Prevent Windows Rattling.—10,106, E. Halton, Wall and Window Ventilators.—10,926, C. Crosby, Bolt for Doors, &c.—11,101, M. Syer, Syphon Water-waste Preventer.—11,179, G. Mulhall, Stencilling Apparatus.—11,209, H. Aitken, Treatment of Stone, &c., for Preventing Deterioration thereof.—11,231, D. McDonald, Wall-coping.—11,263, E. Vaughan, Tread for Stairs, &c.—11,543, L. Tomalin, Water-closets.—11,768, W. Pattenden and A. Rindesland, Window Sashes and Frames.—11,812, R. Dawe, Facilitating the Opening, &c., of Doors and Gates.—11,883, J. Lloyd, Sash-fastener.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

11,752, W. Welch, Ventilators for Sewers, &c.—14,017, P. Walker, Ventilators.—14,038, G. Hovey, Ventilators.—15,252, H. South, Holds for Incandescent Electric Lamps.—3,884, W. Bendall, Bar Attachments for Paint-pots, &c.—4,725, S. Thompson and J. McEwen, Water-closet and other Cisterns, being a loose or separate well, but which may be fixed therein.—10,655, G. Clark, Sawing Stone, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

JULY 21.—By *Debenham, Tewson, & Co.*: 5, Bouverie-rd., Folkestone, f., 3 000*l.*

JULY 27.—By *R. T. Hamilton*: 41, Foreign-st., Brixton, u.t. 76 yrs., g.r. 4*l.*, 250*l.*; 47, 49, and 51, Foreign-st., u.t. 76 yrs, g.r. 9*l.*, r. 87*l.*, 770*l.*; 9 and 11, Carew-st., Camberwell, u.t. 77 yrs., g.r. 9*l.*, r. 67*l.* 12s., 420*l.*; 29, 37, and 39, Reverdy-rd., Bermondsey, u.t. 48 yrs., g.r. 13*l.* 10s., r. 104*l.*, 975*l.*—By *Turner, Rudge, & Turner*: "East Mascall's Farm," Lindfield, and 219 acres, f., 6,150*l.*—By *Jenkins & Sons*: 1, Manor-rd., New Cross, u.t. 71 yrs., g.r. 1*l.* 10s., r. 64*l.*, 620*l.*; 20, Manor-rd., u.t. 69 yrs., g.r. 6*l.* 10s., r. 40*l.*, 395*l.*; 95, Manor-rd., u.t. 72 yrs., g.r. 1*l.*, 490*l.*; 15 and 16, Clarendon-ter., Maida Vale, u.t. 62 yrs., g.r. 12*l.*, 800*l.*; 6 to 12 even, Lewisham High-rd., New Cross, and stabling, u.t. 55 yrs., g.r. 33*l.* 10s., 2,835*l.*

JULY 28.—By *J. C. Platt*: 304, Elgin-av., Maida Vale, u.t. 67 yrs., g.r. 20*l.*, r. 90*l.*, 875*l.*—By *Belton & Sons*: "Pamphilon Tavern," 17, Argyll-st., Regent-st., f., r. 250*l.*, 7,250*l.*—By *Broad & Wiltshire*: 154 and 156, South Lambeth-rd., u.t. 47 yrs., g.r. 10*l.*, r. 62*l.*, 520*l.*—By *W. E. Chapman*: 1 and 2, Leicester Villas, Barnet, f., r. 52*l.*, 480*l.*; 61, Compton-st., Brunswick-sq., u.t. 14 yrs., g.r. 18*l.* 18s., r. 65*l.*, 205*l.*; Albert-ter., Islington, l.g.r. of 108*l.*, u.t. 56 yrs., g.r. 32*l.*, 1,335*l.*—By *S. Walker & Runtz*: 41, Lansdowne-rd., Dalston, u.t. 52 yrs., g.r. 3*l.* 10s., 305*l.*; 1 and 2, Ipswich-rd., u.t. 52 yrs., g.r. 7*l.*, r. 55*l.* 4s., 500*l.*; "The Limes," Lea Bridge-rd., u.t. 58 yrs., g.r. 12*l.*, 215*l.*—By *W. & F. Houghton*: freehold residence, Whipp's Cross, Walthamstow, r. 110*l.*, 1,260*l.*; 3, High-st., Homerton, c., r. 20*l.*, 400*l.*; 85, The Common, Clapton, u.t. 8 yrs., g.r. 15*l.*, 130*l.*—By *E. & H. Lumley*: E 2, "The Albany," Piccadilly, f., chambers, subject to a fee farm rent of 35*l.* a year, 510*l.*—By *Thurgood & Martin*: 51, 53, and 55, Hoxton-st., Hoxton, f., 1,110*l.*—By *Reynolds & Eason*: 36, Blomfield-rd., Maida Vale, u.t. 47 yrs., g.r. 8*l.*, r. 90*l.*, 750*l.*; 3 and 4, Tilley-st., Spitalfields, f., r. 62*l.* 8s., 700*l.*—By *Debenham, Tewson, & Co.*: Two f. cottages and 55 a. 1 r. 7 p., Enfield 4,000*l.*—By *J. M. Klenck & Co.*: 38, White Horse-lane, and 1 to 14, Trafalgar-sq., Mile End, f., 4,285*l.*; 15 to 27, Trafalgar-sq., f., 3,720*l.*; 42, White Horse-l., f., 420*l.*—By *Worsford & Hayward* (at Sheerness): 22, Union-st., Sheerness, f., and three cottages, u.t. 67 yrs., g.r. 5*l.*, 450*l.*—By *D. Smith, Son, & Oakley* (at Alton): "West, field" and grounds, Alton High-st., Hants, f., 1,050*l.*; eight freehold cottages, 440*l.*; a plot of freehold land, 2a. 2r. 34p., 190*l.*; two enclosures of freehold land, 11a., 1,070*l.*; three enclosures of freehold land, 9a. 3r. 34p., 350*l.*; an enclosure of freehold land, 3a. 1r., Selborne, 300*l.*; a plot of freehold land, 3r. 2p., Woolmer Forest, 25*l.*

JULY 29.—By *Beard & Son*: 55, Mansfield-rd., Kentish-town, u.t. 73 yrs., g.r. 7*l.*, 385*l.*—By *J. H. Bethel*: "The Oaks," Forest Drive, Manor Park, f., 1,090*l.*; 32 and 34, Holme-rd., East Ham, f., 330*l.*—By *H. Griffin*: 19 and 21, Balfern-rd., Battersea, u.t. 86 yrs., g.r. 10*l.*, r. 62*l.* 8s., 385*l.*; 51 to 59 odd, Balfern-road, u.t. 86 yrs., g.r. 25*l.*, r. 150*l.* 16s., 945*l.*—By *Relph & Son*: F. residence, cottages, and 2a. 0r. 25p., Upton-rd., Bexley Heath, 1,900*l.*—By *B. Brown*: The Deptford Green Dry Dock and 2a. 1r. 3p. with plant, &c., Deptford-green, u.t. 99 yrs., g.r. 260*l.*, 7,500*l.*—By *H. Donaldson*: 59, Eagle-st., Holborn, f., r. 52*l.*, 600*l.*; Three plots of f. land, Windsor-rd., Upton Park, 105; 26, 28, and 30, Libra-rd., Plaistow, f., r. 46*l.* 16s., 290*l.*—By *D. Smith, Son, & Oakley*: 9, Well-walk, Hampstead, f., 1,800*l.*—By *R Tidey & Son*: 51 to 57 odd, Monsell-rd., Finsbury Park, f., 1,230*l.*; 9 and 11, Jerdan-pl., Fulham, f., r. 65*l.*, 885*l.*

JULY 30.—By *H. Staines*: 34 to 38, Pedley-st., Bethnal Green, u.t. 9¾ yrs., g r. 12*l.* 6s., 200*l.*; 67 and 69, St. Stephen's-rd., and 10 to 18 (even), Ford-rd., Bow, u.t. 17 yrs., g.r. 25*l.*, r. 161*l.* 4s., 370*l.*; 5 to 11 (odd), St. Peter's-st., Bethnal Green, u.t. 22 yrs., g.r. 13*l.*, r. 141*l.*, 770*l.*—By *Briant & Son*: F.g r. of 65*l.*, Lewisham-rd., with reversion in 71 yrs., 1,480*l.*—By *Robins & Hine*: 35, 36, 39 to 42, Devonshire-st., Marylebone, u.t. 24 yrs., no g.r., r. 236*l.*, 1,000*l.*; 48, 51, 56, 58, 59, 61, and 61A, Devonshire-st., u.t. 24 yrs., no g.r., r. 284*l.*, 1,200*l.*—By *Mullett, Booker, & Co.*: 2, Wyndham-st., Marylebone, f., r. 42*l.*, 555*l.*; 1, John-st., Crutched Friars, Corporation lease, g.r. 8*l.* 2s. 6d., r. 100*l.*, 1,650*l.*; 37A, White Horse-st., Commercial-rd., E., f., r. 55*l.*, 790*l.*—By *C. P. Whiteley*: Horseferry-rd., Westminster, l.g.r. of 192*l.* 10s., u.t. 20 yrs., g.r. 24*l.*, and 1A, 3, and 5, Johnson-st., u.t. 20 yrs., g.r. 16*l.*, r. 94*l.* 15s., 2,709*l.*; 75, Mostyn-rd., Brixton, u.t. 72 yrs., g.r. 6*l.*, r. 40*l.*, 325*l.*; 4, St. John's-st., Margate, u.t. 20 yrs., no g.r., 80*l.*; 64, Arthur-st. and the "Robin Hood" beer-house, Hackney, u.t. 55 yrs., g.r. 4*l.* 10s., 360*l.*. By *G. A. Kendall*: 59, East Ferry-rd., Cubitt Town, u.t. 63 yrs., g.r. 3*l.*, 110*l.*; 4, East Ferry-rd., u.t. 6 yrs., g.r. 4*l.* 4s., and 1 to 10, Judkin-st., u.t. 61 yrs., g.r. 27*l.*, 29 to 37 (odd), Chipka-st., u.t. 64 yrs., g.r. 14*l.*, 1,900*l.* By *Tattersall & Co.*: 3, Belmont Villas, Mortlake, f., r. 28*l.*, 360*l.* By *Debenham, Tewson, & Co.*: Wentworth House, Golding's Park, Loughton, f., 750*l.*; f.g.r. of 10*l.*, Loampit Vale Lewisham, with reversion in 50 yrs, 250*l.*; f.g.r. of 18*l.*, with reversion in 23 yrs., Courland-grove, Clapham, 540*l.*—By *A. & A. Field*: Miller's Cottages," White Horse-lane, Manor-pk., f., r. 33*l.*, 10s., 410*l.*; 10, Bowen-st., Poplar, f., r. 22*l.* 2s., 195*l.*—By *Newbon & Co.*: 82 and 84, Lullington-st., Vauxhall, u.t. 34 yrs., g.r. 14*l.*, r. 75*l.*, 715*l.*; No. 171, Hornsey-rd., f., r. 82*l.* 10s., 2,000*l.*; f.g.r. of 56*l.* with reversion in 69 yrs., 1,420*l.*; f.g.r. of 110*l* 5s., Mayton-street, with reversion in 69 yrs., 2,790*l.*; f.g.r. of 15*l.* 10s., Mayton-st., with reversion in 64 yrs., 400*l.*; f g r. of 110*l.* 5s., Mayton-st., with reversion in 69 yrs., 2,905*l.*; a plot of f. land, Forest-rd., Walthamstow, 350*l.*; a plot of f. land, Marlborough-rd., Woodford, 150*l.*—By *E. Stimson*: 11, Wiltshire-rd., Brixton, u.t. 71 yrs., g.r. 7*l.*, 450*l.*; 1, Balaclava-rd., Southwark, u.t. 42 yrs., g.r. 1*l.*, 300*l.*; 21, Sumner-st., f., r. 33*l.*, 340*l.*; 32, Fleming-rd., Walworth, u.t. 32 yrs., g.r. 5*l.*, r. 30*l.*, 260*l.*; f.g r, 31*l.* 10s., with reversion in 86 yrs., Kempson-rd., Fulham, 710*l.*; f g.r. of 20*l.* with reversion in 83 yrs., Cherry Garden-st., &c., Bermondsey, 395*l.*; 25, Jamaica-rd., Bermondsey, f., r. 52*l.*, 350*l.*; 18 to 24 even, Keeton's-rd., u.t. 50 yrs., g r. 20*l.*, 930*l.*; 158 and 160, Fort-rd., u.t. 51 yrs., g.r. 10*l.*, 590*l.*; 10 and 11, Lyndhurst-rd., Peckham, f., r. 90*l.*, 1,070*l.*; a plot of freehold land, in "The Stowage," Deptford, 20*l.*; a plot of freehold land, Hubert-rd., Wimbledon, 90*l.*

JULY 31.—By *Holcombe & Betts*: 21, York-pl., Portman-sq., u.t. 22 yrs., g.r. 30*l.*, r. 110*l.*, 715*l.*—By *Weatherall & Green*: F g.r. of 15*l.*, with reversion in 35 yrs., Islington, 485*l.*; f.g.r. of 20*l.*, with reversion in 35 yrs., 620*l.*; f g.r. of 15*l.*, with reversion in 35 yrs., 480*l.*; f.g.r. of 22*l.*, Duncan-ter., with reversion in 35 yrs., 600*l.*; reversion to "The Bazaar," High-st., held at no g.r. for 35 yrs., 460*l.*; 26, Great Pulteney-st., Golden-sq., u.t. 14 yrs., g.r. 90*l.*, 355*l.*; 1, Silver-pl., u.t. 23 yrs., g r. 12*l* 10s., 275*l.*; 2, Silver-pl., u.t. 32 yrs., g.r., 22*l.* 10s., 345*l.*—By *Jones, Lang, & Co.*: 6, New Basinghall-st., City, u.t. 57 yrs, g.r. 160*l*, r. 360*l.*, 2,500*l.*—By *Rushworth & Stevens*: 36, Villiers-rd., Willesden, f., 195*l.*; range of f. stabling, r. 28*l.*, Ham-yd., Shaftesbury-av., 500*l.*; 35 and 37, Catherine-st., Buckingham-gate, f., 800*l.*—By *R. Reid*: F.g r. of 116*l.*, Bedford-gdns., Kensington, with reversion in 31 yrs., 4,210*l.*; 47, Wells-st., Camberwell, u.t. 32 yrs., g.r. 4*l.* 10s., r. 36*l.* 8s., 220*l.*—By *J. Revell*: 18 to 24 even, Linscott-rd., Clapton, u.t. 87 yrs., g.r. 30*l.*, 1,050*l.*; 1 to 4, Cambridge-villas, Kingston-on-Thames, f., 1,000*l.*; 39 and 39½, New Cut, Lambeth, u.t. 19 yrs., g.r. 30*l*, r. 120*l.*, 660*l.*; 19, Princes-st., u.t. 18 yrs., no g.r. 200*l.*—By *Wagstaff & Warman*: No. 138, Stroud Green-rd., u.t. 76 yrs., g.r. 7*l.*, r. 43*l.*, 480*l.*; 29 to 39 odd, Quilter-st., Bethnal-green, u.t. 34 yrs., g.r. 25*l.* 4s., 1,340*l.*

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	8/0/0	9/0/0
Teak, E.I.. load	8/0/0	14/0/0
Sequoia, U.S.ft.cu.	2/3	3/0
Ash, Canada load	2/5/0	4/0/0
Birch, do.	2/5/0	4/5/0
Elm, do.	3/5/0	4/15/0
Fir, Dantzic, &c.	2/0/0	3/10/0
Oak, do.	2/10/0	4/10/0
Canada.....	4/17/6	6/10/0
Pine, Canada red	2/10/0	3/10/0
Do, yellow	2/0/0	5/0/0
Lath, D'ntzic, fath	5/0/0	6/0/0
St. Petersburg	5/0/0	7/0/0
Deals, Finland, 2nd & 1st std 100	7/15/0	10/0/0
Do, 4th & 3rd..	7/5/0	8/5/0
Do. Riga	6/5/0	7/15/0
St. Petersburg, 1st yellow ..	9/15/0	14/0/0
Do. 2nd yellow	8/5/0	9/5/0
Do. white	6/15/0	10/0/0
Swedish	6/15/0	15/10/0
White Sea	8/5/0	17/0/0
Canada, Pine 1st	12/10/0	24/0/0
Do. do. 2nd....	9/0/0	15/10/0
Do. do. 3rd, &c.	6/10/0	10/0/0
Do. Spruce. 1st	8/0/0	10/10/0
Do. do. 3rd & 2nd.....	6/0/0	7/10/0
New Brunswick	5/5/0	7/5/0
Battens, all kinds	3/10/0	15/10/0
Flooring Boards, sq., 1 in. prep. 1st	0/10/0	0/13/6
Do. 2nd.....	0/9/0	0/10/6
Other qualities	0/4/6	0/7/6
Cedar, Cuba ..ft.	/4	/4½
Honduras, &c.	/4	/4½
Mahogany, Cuba.	/4½	/6½
St. Domingo, cargo av	/4½	/6½
Mexican do. do	/4½	/5
Tobasco do. do	/5½	/7
Honduras do..	/5½	/6½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio.....	10/0/0	20/0/0
Bahia	9/0/0	18/0/0
Satin, St. Domingo . ....ft.	0/0/10	0/1/3

TIMBER (*continued*).		
Porto Rico	0/0/10	0/1/6
Walnut, Italian..	0/0/3½	0/0/7
METALS.		
IRON—Pig, in Scotland .....ton	46/6/0	47/1/0
Bar, Welsh, in London.....	6/5/0	6/15/0
Do. do. at works in Wales	5/15/0	6/5/0
Do. Staffordshire, in London	6/5/0	7/0/0
COPPER—British, cake and ingot	58/10/0	59/0/0
Best selected ..	59/10/0	60/10/0
Sheets, strong..	68/0/0	0/0/0
Chili, bars	52/0/0	52/18/9
YELLOW METAL lb.	0/0/6	0/0/6½
LEAD—Pig, Spanish....ton	12/5/0	12/6/3
English, com. brands	12/7/6	12/10/0
Sheet, English, 3 lbs. per sq. ft. and upwards ..	14/10/0	0/0/0
Pipe	15/0/0	0/0/0
ZINC—English sheet .....ton	27/0/0	0/0/0
Vieille Montagne.....	27/10/0	0/0/0
TIN—Straits	91/7/6	91/17/6
Australian	91/17/6	92/7/6
English Ingots	0/0/0	0/0/0
OILS.		
Linseed .....ton	20/10/0	0/0/0
Cocoanut, Cochin	31/0/0	0/0/0
Do. Ceylon	27/0/0	0/0/0
Palm, Lagos	25/10/0	26/0/0
Rapeseed, English pale	30/10/0	31/0/0
Do. brown	29/15/0	0/0/0
Cottonseed ref...	20/10/0	20/15/0
Oleine	21/15/0	24/0/0
Lubricating, U.S.	5/0/0	6/0/0
Do. refined	8/0/0	12/0/0
TAR—Stockholm barrel	0/18/0	0/18/6
Archangel	0/12/6	0/0/0

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

BUCKFASTLEIGH (Devon).—For the erection of a manse. Mr. W. M. Tollit, architect, Totnes, Devon:—
James Millman, Buckfastleigh £371 10 0
[Lowest of six tenders.]

CHELVESTON-CUM-CALDECOTT.—For the erection of farm premises and cottage, Chelveston-cum-Caldecott, for the Duchy of Lancaster. Messrs. Talbot-Brown & Fisher, architects, Wellingborough:—
E. Brown & Son..... £2,358 0 0

DONINGTON (Lincs.).—For re-roofing the south aisle, and restoring masonry, at the Church of St. Mary and Holy Rood, Donington, for the Vicar and Churchwardens, Trustees of the Wilson Trust Fund. Mr. Edward A. Jollye, architect, Oxford-street, Ripley, Derby:—

G. H. Bateman	£415 0	Geo. Barnsdale, Donington (accepted)	£276 10
S. Sherwin	307 0		

HERTFORD.—For the erection of a new Congregational Hall and Sunday-school Rooms, Hertford. Mr. James Farley, architect, Hertford. Quantities by Mr. T. P. Pieterson, 6, Hampstead-road, N.W.:—

Wade	£1,222	Dupont	£1,159
Willmott & Sons.....	1,200	Ginn & Son	1,137
French & Ellwood	1,173		

HIGHAM FERRERS:—For additions and repairs to farm premises, Higham Ferrers, Northamptonshire, for the Duchy of Lancaster. Messrs. Talbot-Brown & Fisher, architects, Wellingborough:—
E. Brown & Son..... £420 0 0

HIGHAM FERRERS.—For constructing new roads, building estate, Higham Ferrers, Northamptonshire, for the Duchy of Lancaster. Messrs. Talbot-Brown & Fisher, architects, Wellingborough:—
T. Wilmott..... £645 0 0

HIGHAM FERRERS.—For the erection of a farm-house and premises, Higham Ferrers, Northamptonshire, for the Duchy of Lancaster. Messrs. Talbot-Brown & Fisher, architects, Wellingborough:—
E. Brown & Son £2,526 10 0

HIGHAM FERRERS.—For the erection of farm premises, &c., Chelveston-road, Higham Ferrers, Northamptonshire, for the Duchy of Lancaster. Messrs. Talbot-Brown & Fisher, architects, Wellingborough:—
George Henson £1,350 0 0

HORSELL (Surrey).—For the erection of new house, Kettlewell-road, Horsell, Woking, Surrey, for Mr. Francis C. Peake. Messrs. Pooley & Follett, architects, 21, John-street, Adelphi, W.C.:—

Frederick George Davis	£2,993 10	The Co-operative Builders, Lim. (too late)	£2,467 0
Martin Wells & Co.	2,709 0		
J. Harris & Son	2,590 0		
Alfred A. Gale	2,538 0	Henry Brown & Sons (informal)	2,200 0
J. F. Collinson, Teddington (accepted).....	2,349 0		

JESMOND.—Accepted for the erection of parochial buildings, Jesmond. Messrs. Plummer & Burrell, architects, Newcastle-on-Tyne:—
S. B. Burton, Newcastle-on-Tyne £1,496 18 1

LONDON.—For proposed factory, 101, White Lion-street, Pentonville, N., for Mr. G. Culver. Mr. Alfred Allen, A.M.I.C.E., architect, 87, Old-street, E.C. Quantities by Mr. Alfred Johnson, 50, Imperial-buildings, Ludgate-circus:—

		If glazed bricks be omitted in basement.
Hall, Beddall, & Co.	£3,434	£3,144
Patman & Fotheringham	3,432	3,216
Ashby Bros.	3,274	3,057
Brass & Son	3,272	3,052
G. S. Archer	3,200	3,040
W. Downs	3,217	3,029
Lawrence & Sons	3,200	3,010
J. Anley	3,146	2,866
Perry & Co.....	3,050	2,834
Kilby & Gayford	2,983	2,758
W. Shurmur	2,943	2,691

LONDON.—For the erection and fitting up of new laundry at the Infirmary, St. George's-in-the-East, for the Guardians. Messrs. Wilson, Son, & Aldwinckle, architects, 2, East India-avenue, Leadenhall-street, E.C. Quantities supplied:—

A. Martin	£5,503 17 0	W. Johnson & Co., Limited	£4,230 0
C. Pennack	4,884 0 0		
C. Cox.....	4,412 0 0	G. E. Todd	4,085 0
J. Edmunds	4,388 19 2	J. Holland *	4,037 0

* Accepted.

LONDON.—For painting and other works at the South-western Hospital, Landor-road, Stockwell, S.W., for the Metropolitan Asylums Board. Mr. Thos. W. Aldwinckle, architect, 2, East India-avenue, Leadenhall-street, E.C.:—

L. Whitehead & Co. ..	£290 0 0	G. Smith	£250 0 0
W. G. Lilly	279 0 0	W. J. Penfold	235 9 7
M. Batchelor	264 5 0	F. C. Stokes & Co.* ..	187 0 0

* Accepted.

LONDON.—For external painting and repairs at the Infirmary, St. John's Hill, Wandsworth, S.W., for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, 2, East India-avenue, Leadenhall-street, E.C.:—

R. T. Ronald	£1,070 0	G. N. Street & Son	£735 16
R. A. Jewell	875 0	J. King (accepted)	596 10
Turtle & Appleton	798 0	W. Johnson & Co., Ltd.	
Lorden & Son.....	797 0	(withdrawn)	551 0
C. Horton	776 0		

LONDON.—For internal painting and repairs at the Infirmary, St. John's-hill, Wandsworth, S. W., for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, 2, East India-avenue, Leadenhall-street, E.C.:—

Lorden & Son.....	£973 14	Turtle & Appleton	£704 0
W. Hammond	777 0	C. Horton	688 0
R. T. Ronald	736 0	G. N. Street & Son*.....	674 0
W. Johnson & Co., Ltd.	710 0		

* Accepted.

LONDON.—For improving the ventilation of the Board-room at the Infirmary, St. John's-hill, Wandsworth, S.W., for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, 2, East India-avenue, Leadenhall-street, E.C.:—

W. Johnson & Co.,		Lorden & Son	£119 0 0
Limited	£163 0 0	Bugler & Co.....	97 10 0
Turtle & Appleton....	155 0 0	W. Hammond*	72 15 0
C. Horton.....	147 10 0		
G. N. Street & Son ..	139 15 0		

* Accepted.

LONDON.—For supplying and fixing a weigh-bridge at the St. John's-hill entrance to the Infirmary, Wandsworth, for the Guardians of the Wandsworth and Clapham Union. Mr. Thos. W. Aldwinckle, architect, 2, East India-avenue, Leadenhall-street, E.C.:—

H. Pooley & Son	£115	W. & T. Avery (accepted) ..	£108

LONDON.—For alterations and additions in connexion with the erection of an "Otis" electric elevator at No. 1, Hyde Park-gate, S.W. Mr. J. Emes, architect and surveyor, 151, Ebury-street, S.W.:—

Holland & Sons (accepted, exclusive of elevator).. £945 0 0

[No competition.]

LONDON. — For rebuilding the "Shaftesbury" public-house, Shaftesbury-avenue, W., for Mr. Alexander Laws. Mr. Edward Clark, architect and surveyor, 47, Strand, W.C. Quantities by the architect:—

R. Eddie.....	£5,798	Wm. Brass & Sons	£5,500
R. Perkins.....	5,575	Whitehead & Co.....	5,464
Grover & Sons	5,520	J. Anley (accepted).....	5,190

LONDON.—Accepted for building three houses in Fairfax-road, Hornsey, for Mr. H. Lloyd:—

G. Brittain, Esher-street, Kennington..... £810

LONDON.—Accepted for alterations and additions at 109, High-street, New Brompton, for Mr. J. C. Mepham:—

G. Brittain, Esher-street, Kennington..... £170

LONDON.—For erecting new premises for the Stockwell Branch of the London and South-Western Bank, and alterations of adjoining house, Nos. 256 and 258, Clapham-road, S. W. Messrs. Tolley & Son, architects. Quantities by Messrs. Parr & Son:—

Whitehead & Co.....	£4,775	Smith & Sons	£4,387
F. & H. Higgs	4,650	Bryan & Son.....	4,341
Gould & Brand	4,600	Rise & Son	4,335
Candler & Sons	4,500	W. Rowe	4,165
J. & C. Bowyer.....	4,397	W. Marriage.....	4,100
W. Shepherd	4,390	J. Carmichael	4,035

LONDON.—Accepted for carrying out the entire sanitary work at 40, Lowndes-square, W., for Capt. Jas. Head:—

R. P. Beattie £225 0 0

LONDON.—For additions and alterations to premises, 470, Brixton-road, for Messrs. Peter & Evans. Mr. G. Warren Cooper, architect, Bedford-row House, Bedford-row, W.C.:—

Drew & Cadman	£1,337	Dickerson	£1,146
Peacock Bros.	1,256	Triggs	1,100
Young & Lonsdale	1,189		

LONDON.—For erecting studio and shops at Queen's-terrace, Marlboro-road, St. John's Wood. Mr. F. J. Chambers, architect, 11a, College-hill, E.C.:—

Macfarlane Bros.....	£844	G. Parker	£770
Lorden & Son	837	A. & W. Garmar	738

NEW WORTLEY.—Accepted for additions to Wesleyan schools, Vivian-street, New Wortley. Mr. T. Butler Wilson, architect, 12, East Parade, Leeds:—

Mason and Brick—Paul Rhodes	£298 1 8
Joiners—Tomlinson & Son	239 0 0
Plumber and Glazier—Geo. Thompson.....	49 0 0
Slaters—Watson & Worsnop	20 15 0
Plasterer—Wm. Pennington	29 10 0

[All of Leeds.]

SEMPRINGHAM FEN (Spalding).—For the erection of a cottage, for Mr. Geo. Smith. Mr. Edward A. Jollye, architect, Oxford-street, Ripley, Derby:—

Wadsley & Son, Horbling (accepted).. ..... £199 0 0

SOUTHAMPTON.—Accepted for alterations and additions at the St. Denys Board School, for the Southampton School Board. Mr. E. T. Howell, architect:—

Crook & Son £1,584 0 0

[Lowest of six tenders.]

Warehouses and Stables, Sardinia-place, Little Wild-street.—In the list of tenders which appeared in the *Builder* on July 4, page 19, for pulling down and re-building the above premises it was stated that the architect was Mr. L. Sharpe. We are asked to state that Messrs. Lewen Sharpe & Arpin were the architects. The mistake was not ours.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (or 4s. 9d. per quarter), can ensure receiving "The Builder" by *Friday Morning's post.*

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Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY, but those intended for the front Page should be in by TWELVE noon on WEDNESDAY.

SPECIAL.—ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY mornings.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

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Now ready.
READING CASES, { NINEPENCE EACH. (By Post carefully packed), 1s.

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Ditto, ditto, with Carved or Painted Panels, prices according to sketches.

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M. & H.—J. E. N.—J. S. & Co.—K. & F.—F. J. V.—D. C.—T. M. L.—J. H. S.—J. H. B.—L. C. R.—M. T.—C. W. C.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER. and *not* to the Editor.

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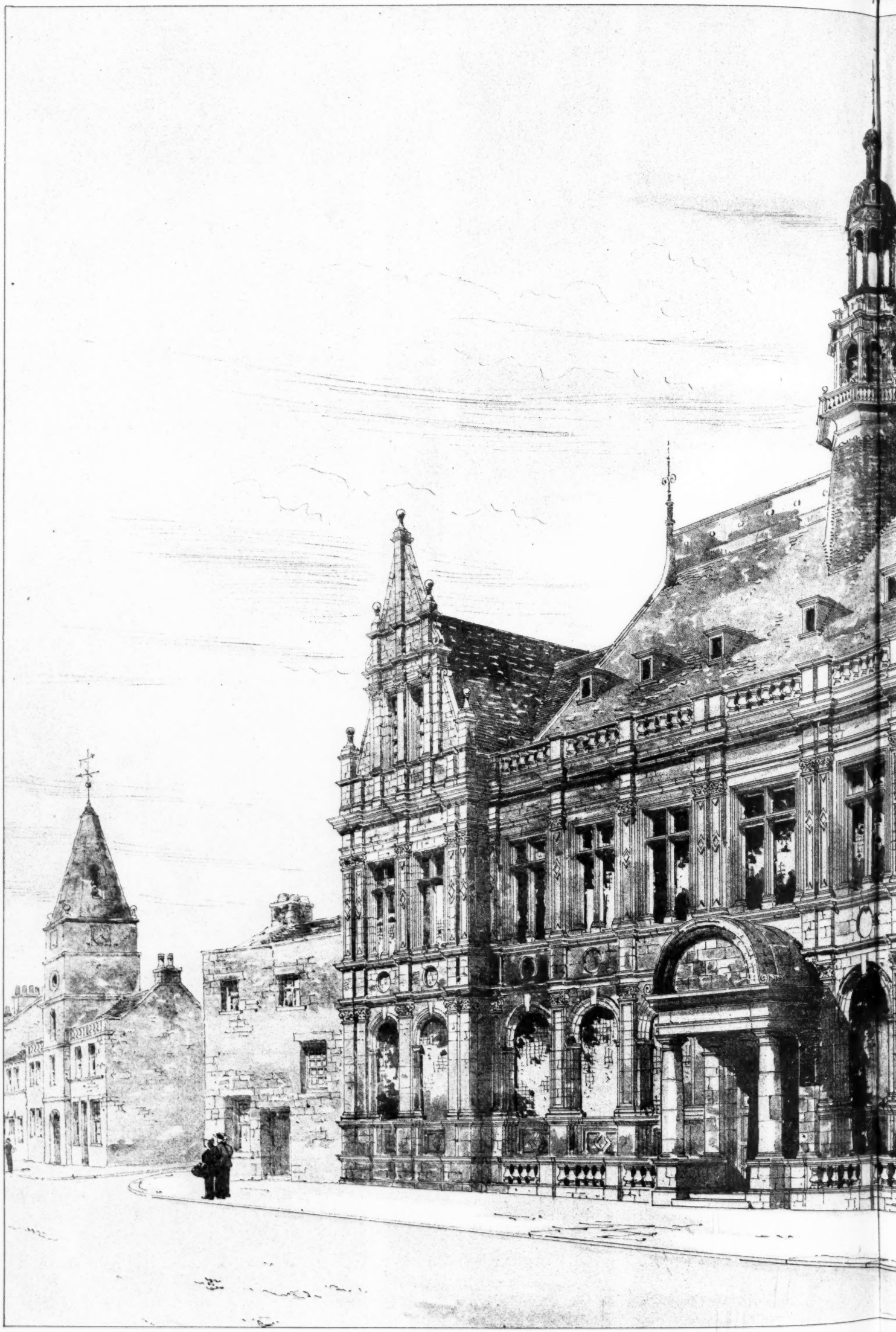

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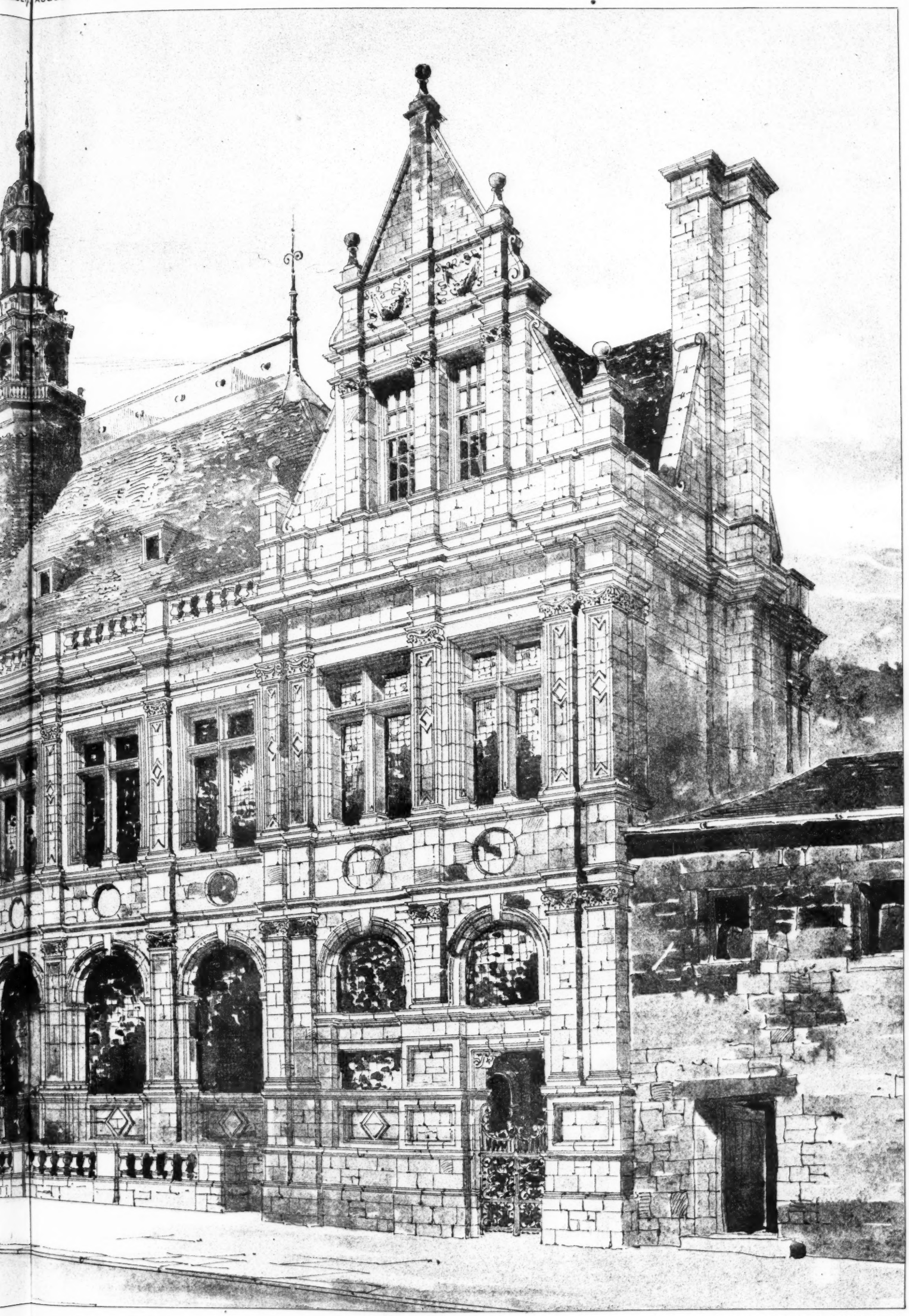

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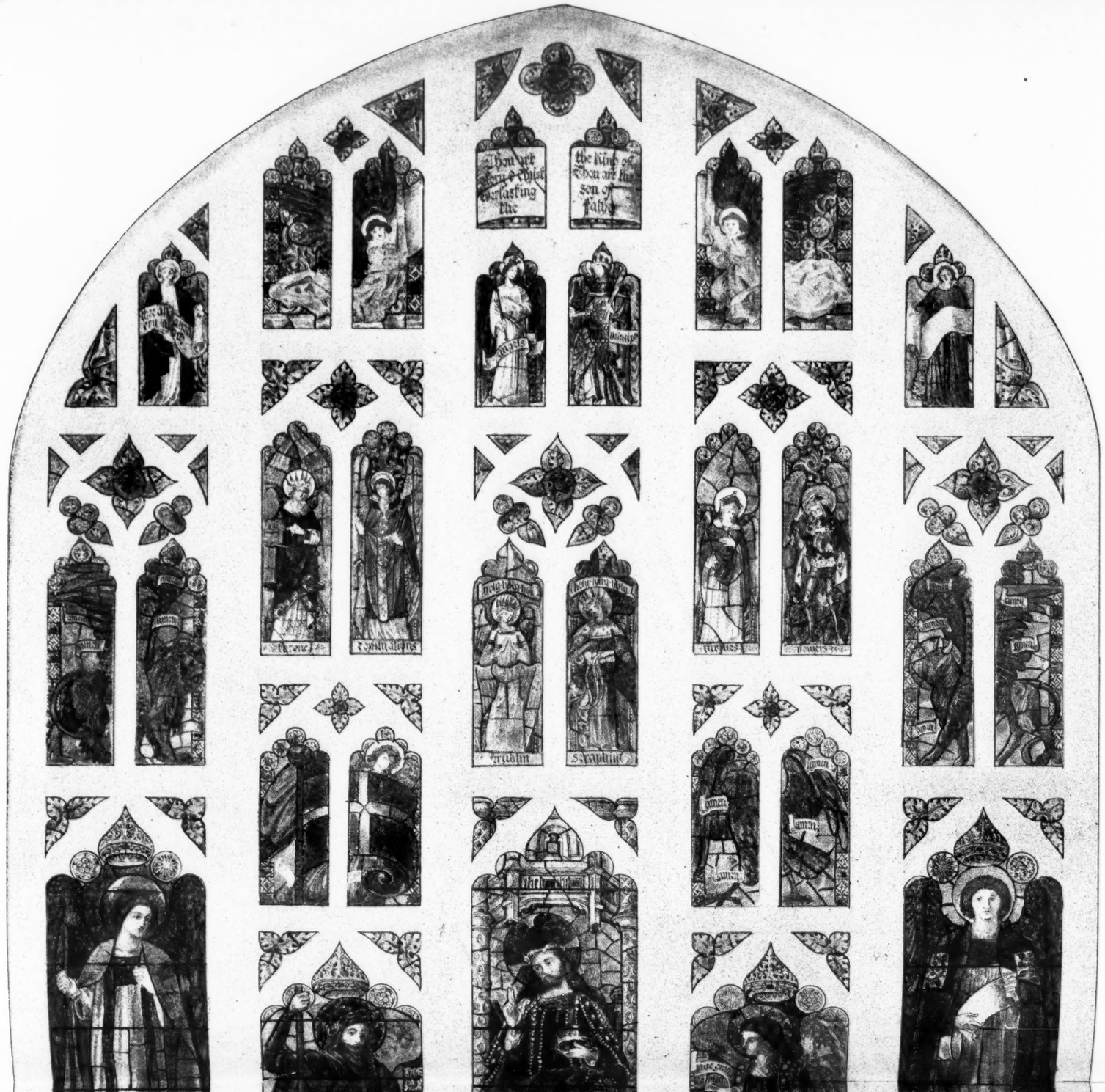
ARY, AYR.—By Messrs. Morris & Hunter


Thou art
the
everlasting
the
the
Thou art
son of
father

INK-PHOTO. SPRAGUE & Co 4 & 5, EAST HARDING STREET, FETTER LANE, E C

DESIGN FOR EAST WINDOW, ST. MARGARET'S CHURCH, LOWESTOFT.—By Messrs. Shrigley & Hunt.

Royal Academy Exhibition, 1891.

VIEW OF ENTRANCE FRONT . NORTH.

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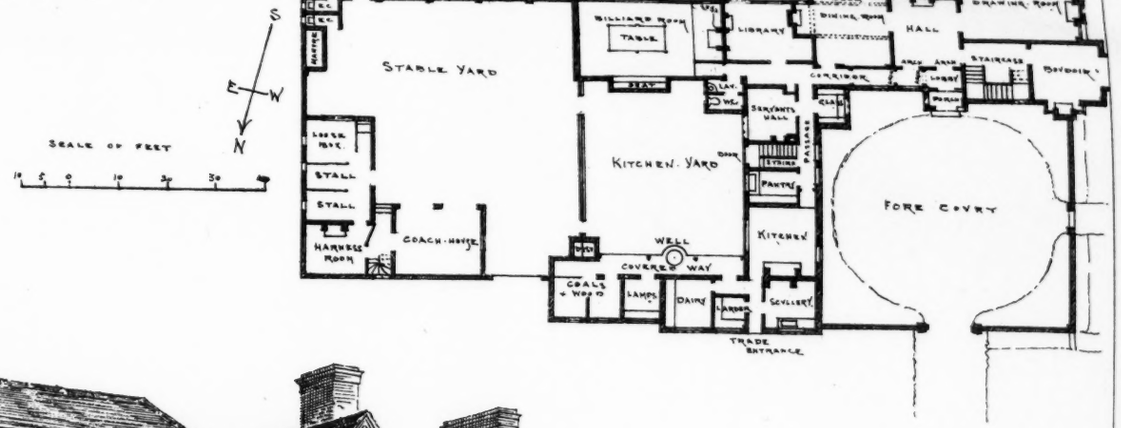
FRONT . NORTH.

HOUSE AT COPSALE,
NEAR HORSHAM. SUSSEX
FOR A.G. CHAPMAN ESQ.



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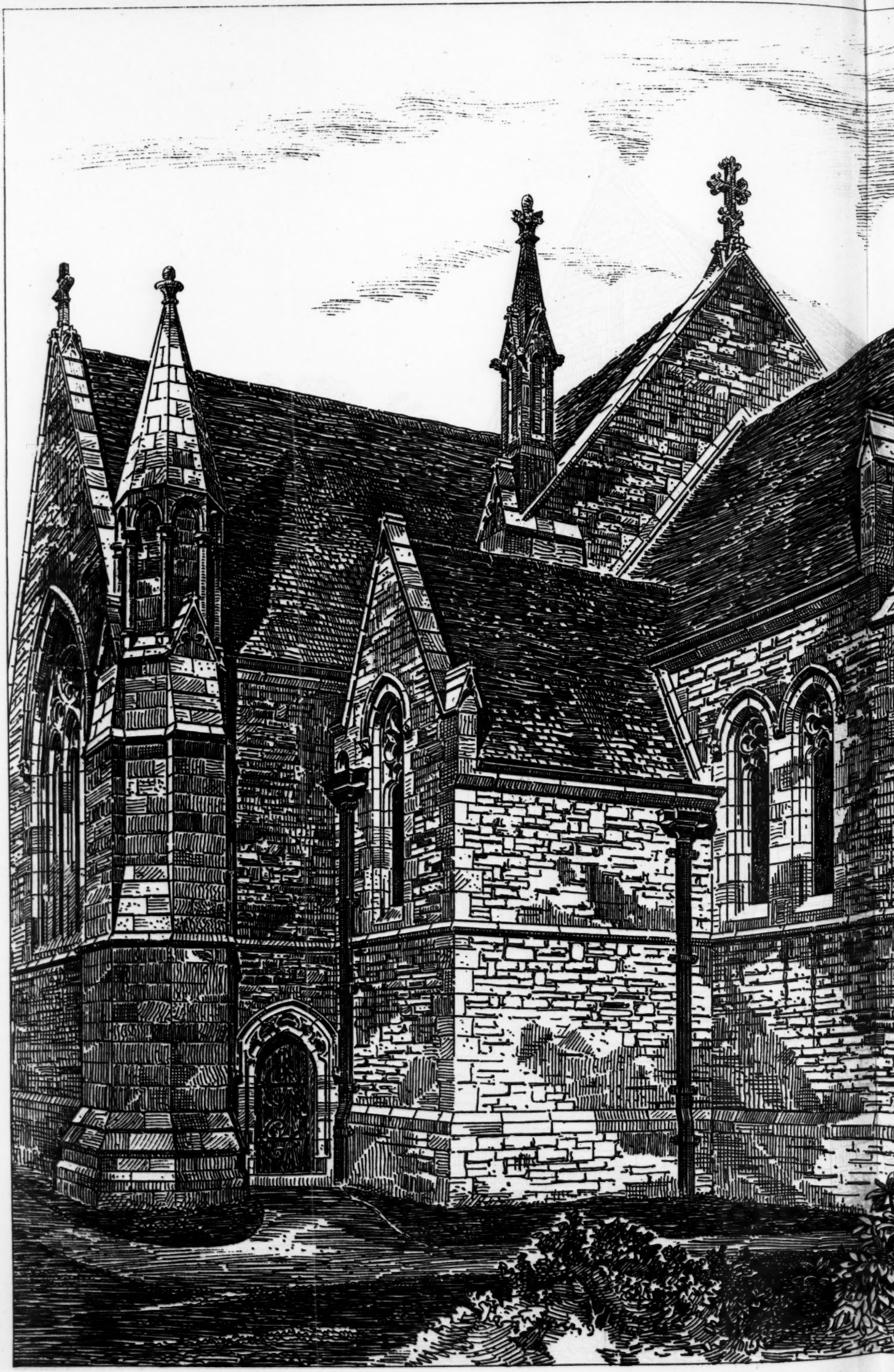
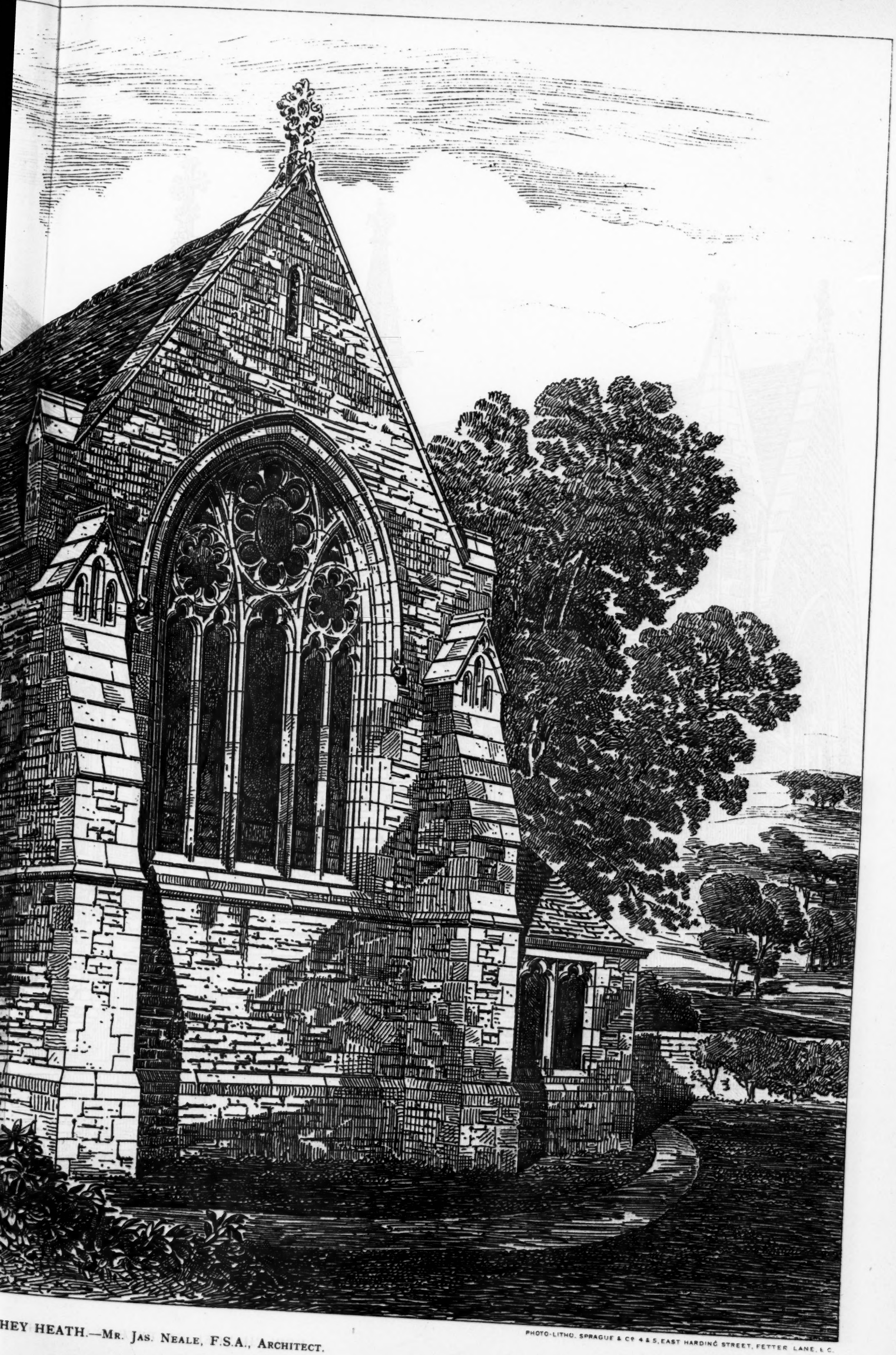
Royal Academy Exhibition, 1891.



NEW CHANCEL, ST. PETER'S CHURCH, BUSH



HEY HEATH.—Mr. Jas. Neale, F.S.A., Architect.

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